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## Inventory Technology Development

A Joint Program for  
Agriculture and  
Resources Inventory  
Surveys Through  
Aerospace  
Remote Sensing

December 1982

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### SUMMARY REPORT: AUSTRALIA GROUND DATA COLLECTION 1981-82 CROP YEAR

#### Volume I

(E83-10317) AUSTRALIA GROUND DATA  
COLLECTION 1981-82 CROP YEAR, VOLUME I  
Summary Report (Lockheed Engineering and  
Management) 289 p HC A13/MF A01 CSCL 02C

N83-27306

Unclas  
00317

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IT-L2-04381  
JSC-18584

SUMMARY REPORT:  
AUSTRALIA GROUND DATA COLLECTION  
1981-82 CROP YEAR

VOLUME I

Job order 72-417

This report describes activities associated with the Australia Technology Development Task associated with feature identification studies of the Inventory Technology Development project of the AgRISTARS program.

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Under Contract NAS 9-15800

For

Earth Resources Applications Division

Space and Life Sciences Directorate

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION  
LYNDON B. JOHNSON SPACE CENTER  
HOUSTON, TEXAS

December 1982

Original photography may be purchased  
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Sioux Falls, SD 57199

LEMSCO-18650

**ORIGINAL PAGE 19  
OF POOR QUALITY.**

1. Report No. IT-L2-04381; JSC-18584		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle SUMMARY REPORT: AUSTRALIA GROUND DATA COLLECTION, 1981-82 CROP YEAR, VOLUMES I AND II				5. Report Date December 1982	
				6. Performing Organization Code	
7. Author(s) C. R. Quinones				8. Performing Organization Report No. LEMSCO-18650	
9. Performing Organization Name and Address Lockheed Engineering and Management Services Company, Inc. 1830 NASA Road 1 Houston, Texas 77058				10. Work Unit No.	
				11. Contract or Grant No. NAS 9-15800	
12. Sponsoring Agency Name and Address National Aeronautics and Space Administration Lyndon B. Johnson Space Center Houston, Texas 77058 Technical Monitor: J. L. Dragg				13. Type of Report and Period Covered	
				14. Sponsoring Agency Code	
15. Supplementary Notes The Agriculture and Resources Inventory Surveys Through Aerospace Remote Sensing is a joint program of the U.S. Department of Agriculture, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration (U.S. Department of Commerce), the Agency for International Development (U.S. Department of State), and the U.S. Department of the Interior.					
16. Abstract  Australia is one of the world's leading surplus food producing countries, ranking fourth in the world wheat exports during 1971-72 and 1975-76; it also ranked sixth in world feed grains. Thus, in the context of research concerning forecasting foreign crop production, Australia is of prime importance.  Under AgRISTARS management; ground data were collected at 20 agricultural sites within Australia during the crop year 1981-82. This two-volume document is a summary of the data collection activity. The following information is provided in Volume I: discussion of data procedures, methods, and products; crop production results; photographs of the Australian agriculture scene, map sheets of segments, Landsat full frames, and aerial photographs of data collection areas; and summarizations of District Agronomist Reports. Volume II consists of the computerized field data, appendixes A and B.					
17. Key Words (Suggested by Author(s))  Australian agriculture data ground data collection activity crop production forecasting accuracy assessment			18. Distribution Statement		
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages Vol. I 308 Vol. II 384	
22. Price*					

\*For sale by the National Technical Information Service, Springfield, Virginia 22161

## PREFACE

The Agriculture and Resources Inventory Surveys Through Aerospace Remote Sensing is a multiyear program of research, development, evaluation, and application of aerospace remote sensing for agricultural resources, which began in fiscal year 1980. This program is a cooperative effort of the U.S. Department of Agriculture, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration (U.S. Department of Commerce), the Agency for International Development (U.S. Department of State), and the U.S. Department of the Interior.

The work which is the subject of this document was performed by the Earth Resources Applications Division, Space and Life Sciences Directorate, Lyndon B. Johnson Space Center, National Aeronautics and Space Administration, The United States Department of Agriculture, Lockheed Engineering and Management Services Company, Inc., and with the support and cooperation of the New South Wales and Western Australia Departments of Agriculture. The tasks performed by Lockheed Engineering and Management Services Company, Inc., were accomplished under Contract NAS 9-15800.

The summary report reflects the efforts of multitudes of people in the United States and Australia. This document would not have been possible without their combined effort in the data collection task. Among the contributors were: Fred Barrett and William Dowdy, U.S. Department of Agriculture; Donald L. Henninger, National Aeronautics and Space Administration; J. David Nichols, Lockheed Engineering and Management Services Company, Inc.; Eric Leggett (retired) and Ken Dawbin, New South Wales Department of Agriculture; Dave Wilcox, Western Australia Department of Agriculture; Roger Boyd, University of Western Australia, Perth, Australia; the District Agronomists plus the District Agronomists-in-training; and the field enumerators.

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## ACRONYMS

AgRISTARS	Agriculture and Resources Inventory Surveys Through Aerospace Remote Sensing
AID	Agency for International Development
ASW	Australian Standard White
CP	Conservation and Pollution
CRD	crop reporting district
DC/LC	Domestic Crops/Land Cover
EW/CCA	Early Warning/Crop Condition Assessment
FAS	Foreign Agriculture Service
FCPF	Foreign Commodity Production Forecasting project
ITD	Inventory Technology Development project, formerly FCPF.
JSC	Lyndon B. Johnson Space Center
LEMSCO	Lockheed Engineering and Management Services Company, Inc.
ML	megalitres
NASA	National Aeronautics and Space Administration
NSW	New South Wales, Australia (state)
NOAA	National Oceanic Atmospheric Administration
RRI	Renewable Resources Inventory
SM	Soil Moisture
SR	Supporting Research
USDA	U.S. Department of Agriculture
USDC	U.S. Department of Commerce
WA	Western Australia, Australia (state)
YMD	Yield Model Development

## 1. INTRODUCTION

The ground data collection activities which took place at 20 agricultural sites within Australia during crop year 1981-82 were invaluable in supporting the Agriculture and Resources Inventory Surveys Through Aerospace Remote Sensing (AgRISTARS) program's Inventory Technology Development (ITD) project. Ground data are essential to technology development activities and will be a necessity in evaluating the performance of technology when applied to Landsat data collected over Australia.

Ground data were collected at twenty (20) agricultural sites (5' x 6 nautical miles) in Australia in the 1981-82 crop year. Eleven (11) sites are in the state of New South Wales and (9) sites are in the state of Western Australia. Ground data for six (6) of the eleven (11) New South Wales sites were provided in the 1979-80 crop year by the Australian New South Wales Department of Agriculture. Land cover data were collected in November 1980 by AgRISTARS personnel (in conjunction with Australian officials) for seven (7) of the nine (9) Western Australia sites. The remaining seven (7) segments were selected on the basis of having a good Landsat acquisition history for crop years 1979-80 and 1980-81 and for reasonable proximity to the other selected ground data sites. See table 1-1 for the list of the 20 segments collected and figures 1-1, 1-2, and 1-3 for the locational maps of the 20 sites.

The ground data collection activity was coordinated with AgRISTARS management, the National Aeronautics and Space Administration (NASA), U.S. Department of Agriculture (USDA), Australian officials, Lockheed Engineering and Management Services Company, Inc. (Lockheed-EMSCO), and the New South Wales and Western Australia Departments of Agriculture.

The ground data collection in Australia consisted of a land-use inventory account of each field or parcel of land within selected sample segments by identifying a growing crop or current land use and an "initial interview" of land operators to collect specific information about wheat, barley, oats, and lupins in selected fields within the sample segments.

TABLE 1-1.- 1981-82<sup>a</sup> AUSTRALIA GROUND DATA COLLECTION: 20 SAMPLE SEGMENTS

Segments	State	Shire	Path/Row	Latitude	Longitude
4013	NSW	Liverpool Plains (Gunnedah)	96/82	31°03'24"	150°10'45"
4015	NSW	Tamarang (Spring Ridge)	96/82	31°23'15"	150°20'03"
4016	NSW	Liverpool Plains (Tambar Springs)	96/82	31°16'51"	149°50'00"
4030	NSW	Coonabarabran (Mullaley)	96/82	31°01'18"	149°48'48"
4033	NSW	Coonabarabran (Purlewaugh)	97/82	31°24'51"	149°27'51"
4036	NSW	Gilgandra (Curban)	97/82	31°32'57"	148°42'54"
4037	NSW	Gilgandra (Eumungerie)	97/82	31°54'42"	148°32'01"
4038	NSW	Gilgandra (Armatree)	97/82	31°26'24"	148°21'06"
4042	NSW	Timbregongie (Trangie)	98/82	31°57'00"	147°54'15"
4095	NSW	Narrabri (Wee Waa)	97/81	30°12'06"	149°27'55"
4104	NSW	Coonamble (Combara)	97/82	31°12'24"	148°11'12"
4408	WA	Bruce Rock	118/82	31°49'39"	118°03'40"
4410	WA	Cunderdin	119/82	31°28'35"	117°21'45"
4412	WA	Kellerberrin	119/82	31°23'45"	117°49'27"
4416	WA	Merredin (Hines Hill)	118/82	31°33'45"	118°03'51"
4419	WA	Mukinbudin	118/81	30°28'00"	118°23'48"
4422	WA	Quairading	119/82	32°10'27"	117°21'48"
4423	WA	Westonia	118/81	30°32'06"	118°38'03"
4425	WA	Coorow	121/81	30°07'30"	115°29'48"
4427	WA	Dalwallinu	120/81	30°23'15"	116°45'51"

<sup>a</sup>Ground data collected in previous years:

1977-78 ground data: 4042

1979-80 ground data: 4013, 4015, 4016, 4030, 4033, 4042

1980-81 "windshield survey": 4408, 4412, 4416, 4419, 4423, 4425, 4427

Symbol definition:

NSW = New South Wales

WA = Western Australia

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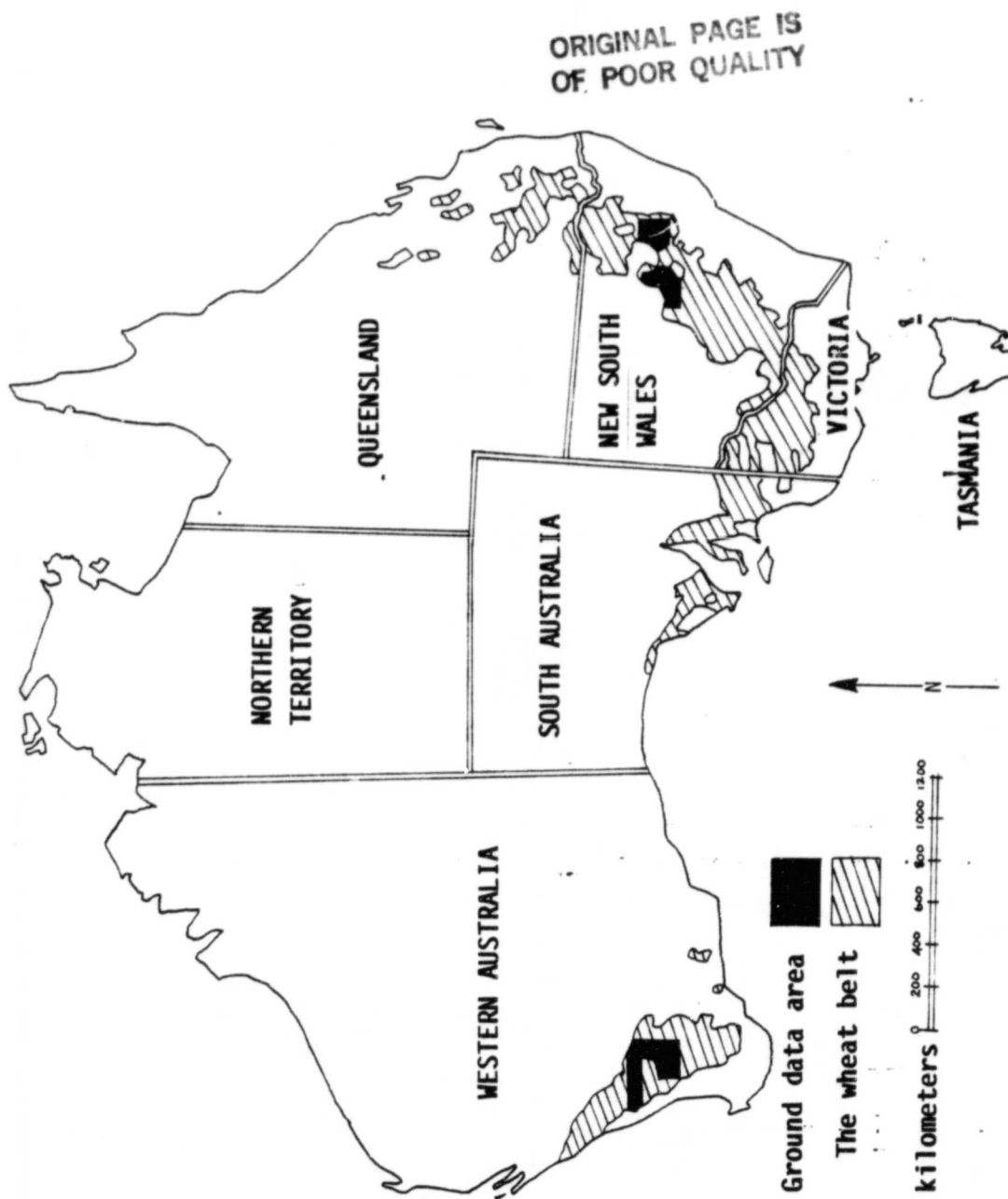


Figure 1-1.- Australia 1981-82 crop year ground data collection sites.



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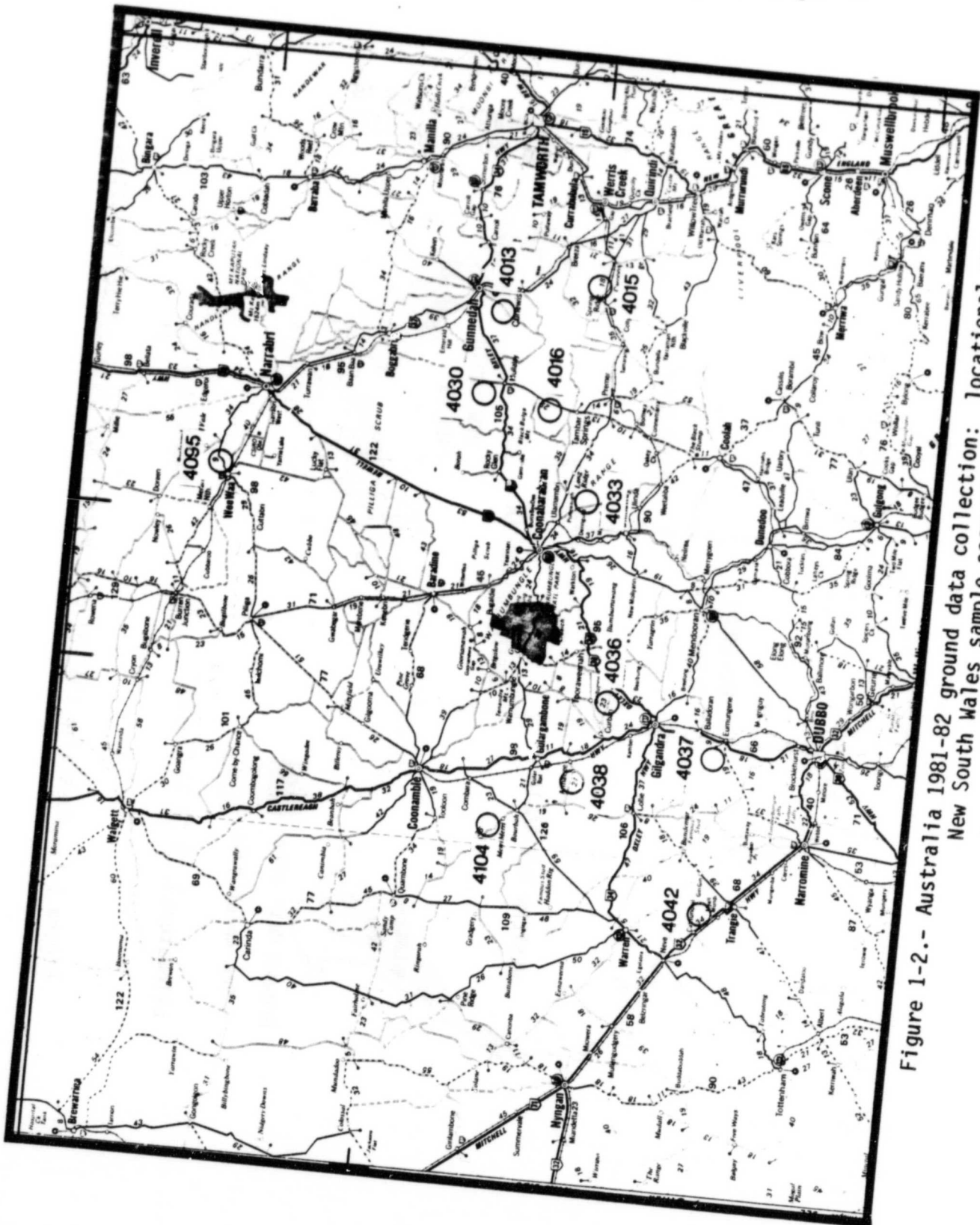


Figure 1-2.- Australia 1981-82 ground data collection: locational map,  
New South Wales sample segments.

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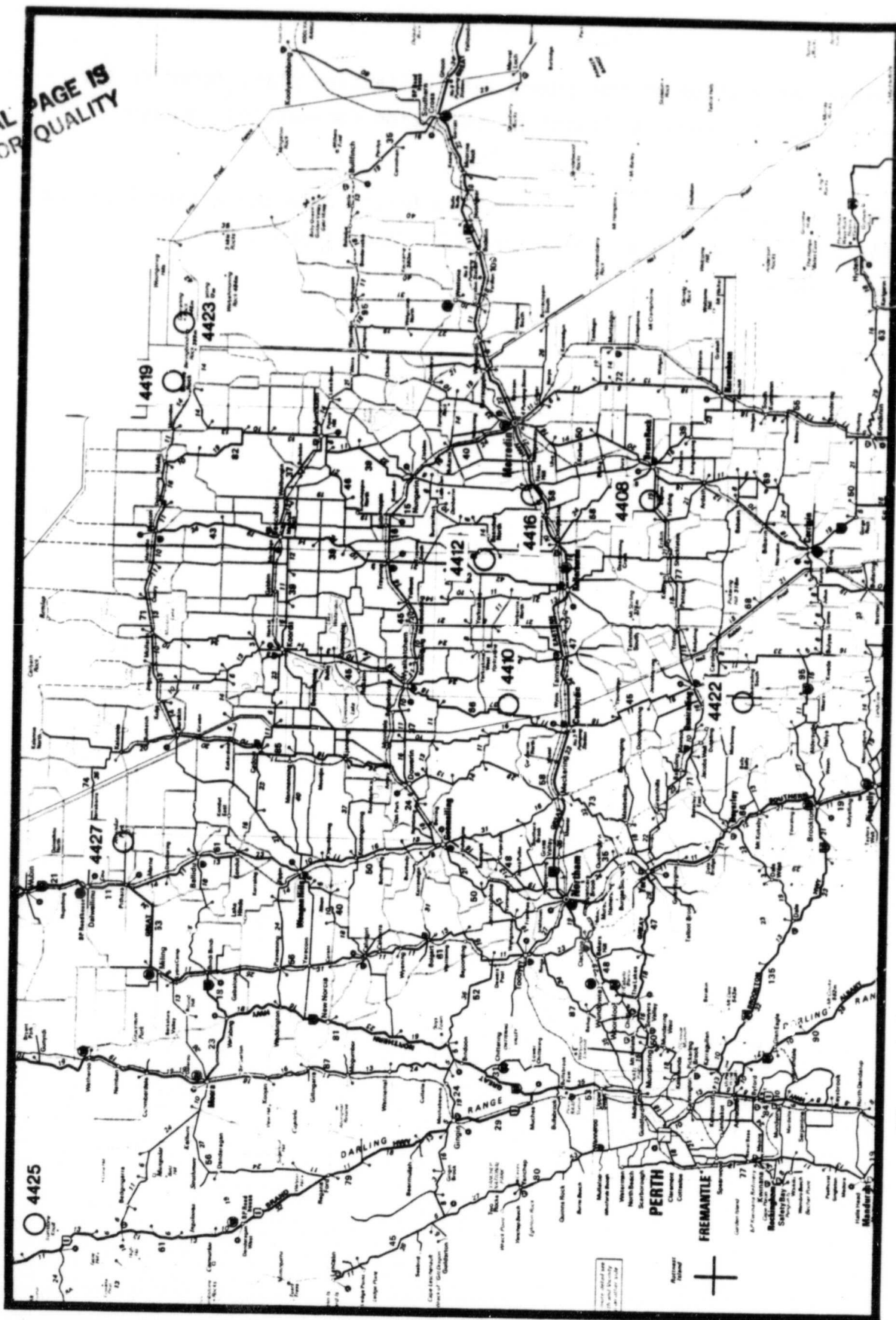


Figure 1-3.- Australia 1981-82 ground data collection: locational map, Western Australia sample segments.

For further information on the ground data collection plan, refer to the following AgRISTARS Foreign Commodity Production Forecasting document (ref. 1):

Reed, C. R.; and Nichols, J. D.: Australia Ground Data Collection Detailed Plan for 1981-82 Crop Year. AgRISTARS, JSC-17607 LEMSCO-17173, September 1981.

## 2. EXECUTIVE SUMMARY

AgRISTARS is a long-term program of research, development, test, and evaluation of aerospace remote sensing to meet the needs of the U.S. Department of Agriculture (USDA). The program is a cooperative effort of: the USDA; the National Aeronautics and Space Administration (NASA); the U.S. Department of Commerce (USDC) through its agency, the National Oceanic and Atmospheric Administration (NOAA); and the U.S. Department of the Interior (USDI). In addition, the Agency for International Development (AID) of the U.S. Department of State participates as an exofficio observer and potential future user agency.

In 1980, the program was initiated as an effort based on satisfying current and future requirements of the USDA for high priority agricultural and other renewable resources type information. This information is important to the USDA in addressing national and international issues on supply, demand, and competition for food and fiber.

The overall goal of AgRISTARS is to determine the feasibility of integrating aerospace remote sensing technology into existing or future USDA data acquisition systems. Determining feasibility depends upon the assessment of numerous factors over an extended period of time. Determinations of the reliability, costs, timeliness, objectivity, and adequacy of information required to carry out USDA missions are planned in the program. The overall approach consists of a balanced program of remote sensing research, development, and testing which addresses a wide range of information needs on domestic and global resources and agricultural commodities. The USDA identified the following seven information requirements:

1. Early warning of change affecting production and quality of commodities and renewable resources
2. Commodity production forecasts
3. Land-use classification and measurement
4. Renewable resources inventory and assessment
5. Land productivity estimates

6. Conservation practices assessment
7. Pollution detection and impact evaluations

Based on these information requirements, as well as on a specific immediate need for better or more timely information on crop conditions and expected production, the AgRISTARS technical program was developed. It consists of eight projects which address all seven of the USDA information needs with a clear emphasis in the first two, early warning of change and commodity production forecasts. The eight projects include the following:

1. Early Warning and Crop Condition Assessment (EW/CCA)
2. Inventory Technology Development (ITD) [Formerly known as the Foreign Commodity Production Forecasting (FCPF) project.]
3. Yield Model Development (YMD)
4. Supporting Research (SR)
5. Soil Moisture (SM)
6. Domestic Crops and Land Cover (DC/LC)
7. Renewable Resources Inventory (RRI)
8. Conservation and Pollution (C/P)

The projects are interrelated both through mutuality of information needs and through much common technology.

The objective of the ITD project, in which the ground collection activities described herein were performed, is to develop and test techniques for using space remote sensing technology to provide objective, timely, and reliable forecasts of foreign crop production without requiring ground observations. The prospective users of this technology are the USDA/Foreign Agriculture Service (FAS) and various international organizations concerned with world food and fiber supply. The project is led by NASA with participation by USDA and NOAA. In achieving its objective, the ITD research considers eight crop/region combinations in the United States and five foreign countries, including the U.S.S.R., Argentina, Brazil, Canada, and Australia. Small grains, corn,

and soybeans will be studied. ITD research expands and improves upon the remote sensing technology developed in previous experiments during the mid-1970's.

Australia is one of the world's leading surplus food producing countries. During 1971-72 and 1975-76, Australia ranked fourth in the world wheat exports and sixth in world feed grains. The United States ranked first in both, followed by Canada and France for wheat, and France, Argentina, Canada, and South Africa for feed grains. Thus, in the context of research concerning forecasting foreign crop production, Australia is of prime importance.

Wheat production in Australia has some unique characteristics which make it an interesting subject for crop production forecasting. Among these characteristics is the relatively long potential planting period which, in the principal wheat growing areas of New South Wales, Australia, can extend from May through July and even into early August. Furthermore, different varieties of wheat are used if planting occurs early rather than late. Drought is a relatively common occurrence in the wheat growing regions and can be localized or quite widespread. Drought can result in abandonment (not economical to harvest) and/or grazing of wheat fields. These unique characteristics must be accommodated in any technology directed at crop production forecasting and are, therefore, of primary concern within the ITD project. In this regard, the transition from understanding the agronomic aspects of wheat production in Australia to understanding how the wheat crop is portrayed in remotely sensed data is best facilitated with accurate ground observations. Such ground observations are invaluable in the research, test, and evaluation mode even though the specific ITD objective is to develop such technology for use without ground observations. Ground observations allow for more rapid development of better technology; in general, ground data play three key roles:

1. Ground data are the only reference that can be used for initial interpretations of data collected by satellite. Without ground data, an analyst could not develop the necessary spectral relationships to distinguish corn from trees or soybeans from sunflowers with the satellite data. Ground data are the basis for learning how to sort and classify satellite data.

2. Ground data that are collected periodically during a crop season provide the basis for construction of a calendar representing crop development in areas where the data were collected. By comparing calendars for the same crop in several areas, analysts can determine how much variability in crop development is caused by differences in soil and climates. By comparing the crop development calendar for an area with temperature and rainfall calendars, analysts can determine how much of the variability in crop development is attributed to these factors. Knowledge of these relationships is vital to the development of methods of forecasting crop production through remote sensing techniques.
3. Once analysts feel that they understand how to interpret satellite data, they try to analyze it without benefit of ground data. When the analysis is complete, ground data are used to assess how well the analysts interpreted the data. This stage is normally known as accuracy assessment. The results of this process are utilized to develop models and algorithms of the decision logic in a way that will minimize the total error (bias and variance) for an automated area estimation system.

The ground data collection activities described in this document were a joint effort of the USDA, NASA, and the Departments of Agriculture of New South Wales and Western Australia, Australia. Australian personnel were trained in the AgRISTARS ground data collection procedures to ensure compatibility with existing data handling procedures. Australian personnel involved included researchers in agriculture and remote sensing, some of whom comprise what is known as the Wide Scale Wheat Production Monitoring Pilot Project, as well as personnel of the New South Wales and Western Australia Departments of Agriculture and the University of Western Australia, Perth, Australia.

The ground data collected have been shown to be of excellent quality and will undoubtedly prove invaluable in the development of technology for crop production forecasting in Australia, as well as other parts of the world.

### 3. DATA COLLECTION

#### 3.1 DATA COLLECTION PROCEDURES

The procedures for training the Australian enumerators in collecting the sample segment land-use inventory, the "initial interview" of the land operators, and the collection of specific crop information for selected fields within the sample segments are defined in the Enumerator's Manual for Australia 1981 Ground Data Survey (ref. 2). The manual was prepared by USDA and NASA personnel specifically for use in Australia and was the foundation for training the enumerators. The 1981 AgRISTARS Ground Data Survey Enumerators Manual (ref. 3) was used for further reference to supplement the manual for Australia.

The enumerators were trained by a USDA representative, a Lockheed coordinator, and representatives of the New South Wales Department of Agriculture and the Western Australia Department of Agriculture in field data collection techniques.

Securing permission of the landowners in the data collection areas was made by the respective Australian Department of Agriculture District Agronomists. In New South Wales, District Agronomists and District Agronomists-in-training were the enumerators for the data collection. In Western Australia, the enumerators were graduate students from the University of Western Australia in Perth, Western Australia.

The ground data collection activities began in New South Wales on October 19, 1981, with training of personnel in Dubbo. Training was conducted in two sessions, one in Dubbo on October 21, 1981, and the other in Gunnedah on the following day. Collection of the land-use inventory data commenced October 20, 1981, with quality control checks by the training instructors beginning the same day. Training instructors returned to Sydney on October 24, 1981. October 25, 1981, was a travel day in order that training could begin in Perth (Western Australia) on October 26, 1981. For the most part, field observations were complete in November except for one segment in



New South Wales (segment 4030) that was received in March of 1982. The date for the segment comments is contained in the field data located in appendix A.

### 3.2 DATA COLLECTION METHOD USED BY THE ENUMERATORS

1. Locate the segments by using maps. Use the aerial photographs to determine the field patterns within the segments.
2. Determine the land owner or operator and seek their cooperation in completing the land use inventory. Form A was used for operator-supplied information.
3. Outline all field boundaries on the photo overlay except fields less than 2 hectares. Record correct boundaries as field boundaries may have changed from the boundaries on the aerial photographs. Assign a field number for form A and form D comments.
4. Continuous areas with no cultivated crops or pastures can be combined, outlined, and coded as a single entity.
5. Assign crop codes using the available list found in the Enumerators Manual; print the code legibly on the segment overlay; e.g., OA which is the field code for oats. Additional codes to be used in combination with other crop codes are to describe special conditions; e.g., OA/G which is the code for a field of grazed oats.
6. Form D was used for comments necessary to describe crop conditions or cultural practices that may have affected the crop development or the quality of the collected field data.
7. Form A interview information was used to provide specific information about wheat, barley, oats, and lupin fields. A unique field number was assigned for these fields. Ten fields were done in this manner for each owner/operator within the segment.
8. Take handheld 35mm slides of wheat, oats, barley, and lupin fields identified on form A and other representative slides to describe the Australian agricultural scene. The slides will provide additional visual information pertaining to these fields.

### 3.3 DATA PRODUCTS

The final ground data products were:

1. The aircraft photography base used for each segment with an additional copy of the aircraft photography (sections 8 and 10).
2. The frosted mylar field overlay for each segment with the appropriate symbols as specified in the Enumerator's Manual clearly marked with registration marks to match with the aircraft photography base. The appropriate field boundaries throughout the segment area were outlined as stated in the Enumerator's Manual (sections 8 and 10).
3. Completed "initial farmer interview" form A, as defined by the Enumerator's Manual (appendix A).
4. Completed form D for any comments necessary to describe crop condition, cultural practices, etc., that may have affected crop development or the quality of the data being collected (appendix A).
5. Handheld 35mm color slides of wheat, oats, barley, or lupin fields identified on form A or other representative slides to describe the Australian agricultural scene (appendix B).
6. District Agronomist periodic reports for New South Wales and Western Australia 1981 crop year (sections 8.4 and 10.6).

#### 4. CROP PRODUCTION RESULTS FOR THE 1981-82 SEASON

##### 4.1 WHEAT AND BARLEY

Australian wheat production estimates for crop year 1981-82 are given in table 4-1 (ref. 4); barley production estimates are in table 4-2 (ref. 4).

##### NEW SOUTH WALES

Wheat yields were well above the 1980-81 drought-affected crop and were marginally less than the previous five-year average. Favorable harvesting conditions in general were encountered throughout the state. Barley yields were well above the 1980-81 drought-affected yields.

##### WESTERN AUSTRALIA

Unseasonal weather conditions delayed completion of the wheat harvest but had no significant adverse effects on quality.

TABLE 4-1.- AUSTRALIAN WHEAT PRODUCTION ESTIMATES

Estimates: Wheat Production 1981-82 Crop Year (1000 tonnes)						
Total Australia	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania
16212	5700	2560	1500	1690	4760	2

TABLE 4-2.- AUSTRALIAN BARLEY PRODUCTION ESTIMATES

Estimates: Barley Production 1981-82 Crop Year (1000 tonnes)						
Total Australia	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania
3444	700	495	390	1300	540	19

#### 4.2 OTHER GRAINS: TRITICALE (ref. 5)

Triticale is increasing in importance as an Australian feed grain. Production in 1980-81 was approximately 50,000 tons and is believed to have more than doubled in 1981-82 to around 120,000 tons.

#### 4.3 OILSEEDS

Although Australia produces a number of oilseeds, the area and production are not large and are highly variable for individual oilseeds depending on seasonal conditions. Area and production of oilseeds for years 1979-80, 1980-81, and 1981-82 are given in table 4-3 (ref. 5).

TABLE 4-3.- AREA AND PRODUCTION OF OILSEEDS IN AUSTRALIA  
FOR YEARS 1979-80, 1980-81, AND 1981-82

Crop	Area, 1000 hectares			Production, 1000 tons		
	1979-80 <sup>a</sup>	1980-81 <sup>a</sup>	1981-82 <sup>b</sup>	1979-80	1980-81	1981-82
Linseed	17	11	9	14	8	7
Rapeseed	42	24	24	41	18	19
Safflower	54	18	38	30	9	23
Sunflower	221	197	202	142	138	145
Soybeans	57	45	45	82	70	73
Peanuts <sup>c</sup>	32	29	35	39	40	46
Cottonseed	71	84	104	136	161	189
Total	494	358	457	484	444	502

<sup>a</sup>Revised.

<sup>b</sup>Preliminary and for summer-grown oilseed forecast.

<sup>c</sup>Production on an in-shell basis.

## 5. NEW SOUTH WALES AND WESTERN AUSTRALIA AGRICULTURAL DATA

### 5.1 NEW SOUTH WALES AGRICULTURAL DATA

#### 5.1.1 WHEAT, BARLEY, AND OATS - VARIETAL CONTROL, RECOMMENDED VARIETIES FOR 1981-82, SOWING TIMES, AND SILO GROUPINGS

Australia controls the wheat varieties grown in order to improve the grain quality of each state's wheat crop. The aim is: (a) to achieve uniform delivery grades and (b) to maximize the quality of the premium grades in demand by overseas customers. The Standing Advisory Committee On Wheat is responsible for the recommendations of silo groupings and varieties for each silo grouping.

Starting with the 1982-83 season, there will be a change in the way silo groupings are assigned. The new silo groupings are a result of studying the first three seasons. The new groupings, based on environmental areas, should allow varieties to fit into the appropriate groupings more accurately. However, the 1981-82 crop year was based on the old silo groupings. The recommended wheat varieties are: AVOCET, BANKS, CONDOR\*, COOK, EAGLE, EGRET\*, GATCHER, JABIRU, KITE, OLYMPIC, SHORTIM\*, SONGLEN, TEAL, TIMGALEN, and TIMSON\*; also, three durum varieties, DURAL\*, DURAMBA\*, and DURATI, are recommended and these are accepted only at certain silos. Varieties marked by an asterisk (\*) are being considered for withdrawal from the 1982 recommendations for certain silos. The recommended wheat varieties and sowing times are given in table 5-1.

TABLE 5-1.- SOWING TIME FOR WHEAT VARIETIES (ref. 6)

Early	Early to midseason	Midseason	Midseason to late	Late
Dural Duramba Jabiru	Olympic Shortim Teal	Kite Timson	Cook Egret Timgalen	Avocet Banks Condor Durati Eagle Gatcher Songlen

Early-to-midseason sowing for wheat is from late April to mid-May. Midseason-to-late sowing is from early May to early June, and late sowing is from late May to late June. The sowing dates are only approximate and may be extended either way depending on soil and climatic conditions. Table 5-2 defines the silo groups for the 11 New South Wales ground data segments. Tables 5-3 and 5-4 show the maturing period by variety for oats and barley, respectively.

TABLE 5-2.- 1981 SILO GROUPINGS FOR THE 11 NEW SOUTH WALES  
GROUND DATA SEGMENTS (ref. 7)

Silo group	Segment number	Recommended wheat varieties
1	4095	Banks, Cook, Gatcher, Kite, Shortim, Songlen, Timgalen, Timson*
2	4013, 4015 4016, 4030 4038, 4104	Banks, Cook, Gatcher, Kite, Shortim, Songlen, Timgalen, Timson*
3	4033, 4036 4037, 4042	Banks, Cook, Eagle, Gatcher, Kite, Shortim, Songlen, Timgalen

\*Timson is being considered for withdrawal from the 1982 recommendations for certain silos.

TABLE 5-3.- OATS MATURING PERIOD BY VARIETY (ref. 8)

Early	Early to midseason	Midseason	Midseason to late	Late
Coolabah West		Avon Cooba Moore	Cassia	Algerian Blackbutt Acacia Stout Sual

TABLE 5-4.- BARLEY MATURING PERIOD BY VARIETY (ref. 8)

Early	Early to midseason	Midseason	Midseason to late	Late
Beecher	Clipper Forest Galleon	Cutter Reisibee	Lara Malebo	Abyssinian Proctor Shannon

### 5.1.2 CROP CALENDAR

The historical normal crop calendar at state level for New South Wales appears in figure 5-1. This crop calendar has a range of planting and harvesting dates reported. Interpolation of the other crop growth stages was based on climatic factors.

### 5.1.3 OTHER CROPS

#### 5.1.3.1 Triticale (ref. 9)

Triticale is a man-made hybrid of durum wheat and cereal rye. In New South Wales, it is grown best under irrigation and in acid soil areas with high aluminum content. The principal use of triticale is for stock and poultry feed. Widescale commercial production will be dependent upon price and demand for this type of grain.

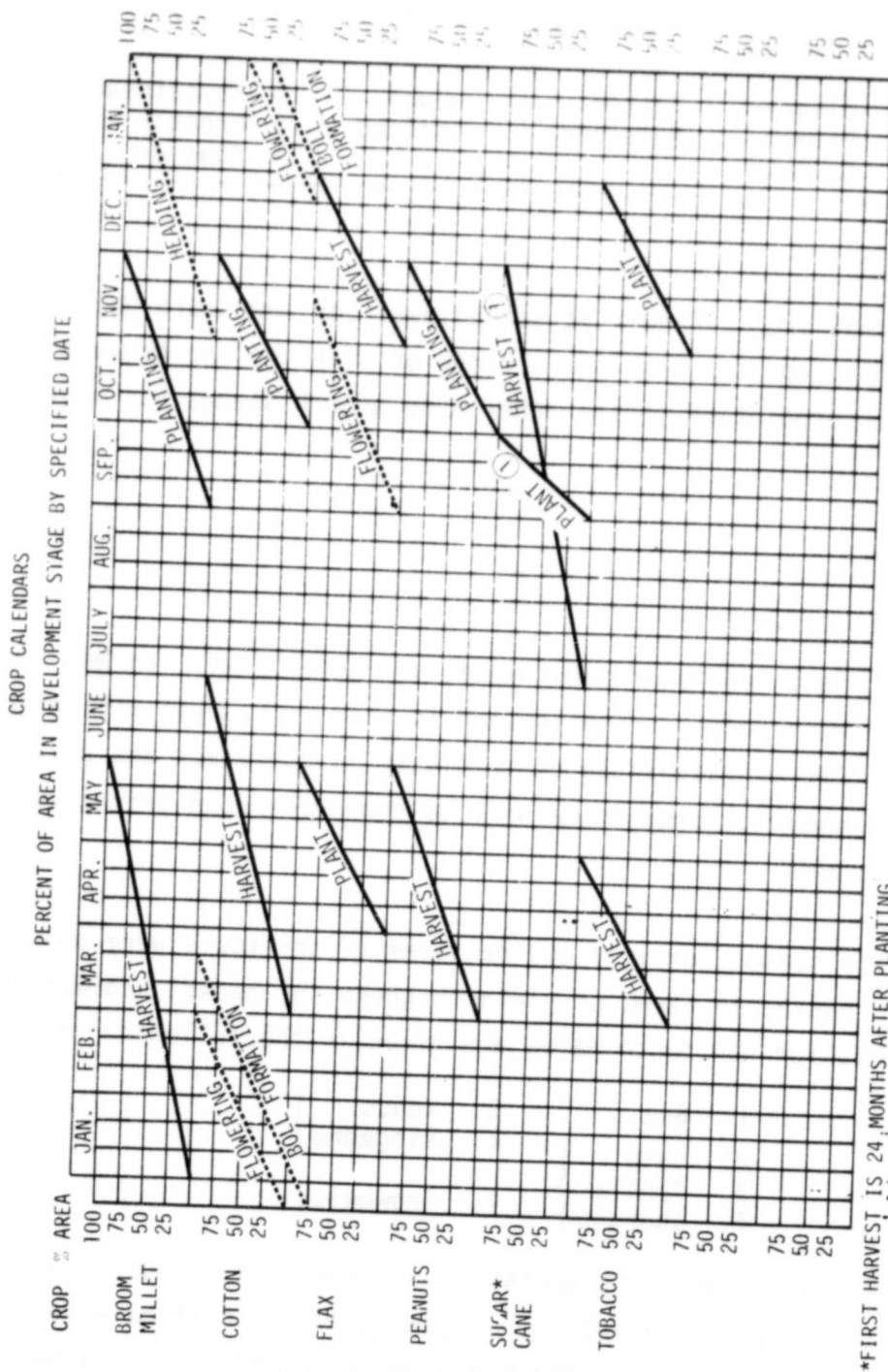
In the 1981-82 crop season, only 77,000 hectares of triticale were planted in New South Wales. Ranked in terms of yield (highest to lowest), commercial triticale varieties for New South Wales are given in the following list.

- |            |              |
|------------|--------------|
| 1. Dua     | 5. Venus     |
| 2. Satu    | 6. Ningadhu  |
| 3. Tyalla  |              |
| 4. Coorong | 7. Growquick |

This ranking reflects the maturity pattern. Ningadhu and Growquick are the latest maturing of the seven varieties. Higher yielding triticale varieties outyield wheat if grown under irrigation and on acid soils. The highest dryland yielding variety has been Dua, averaging as well or better than comparable dryland wheat varieties.

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OF POOR QUALITY

COUNTRY AUSTRALIA STATE, PROVINCE, OR SSR NEW SOUTH WALES  
CRD, DISTRICT, SHIRE, PARTIDO, OBLAST, OR CENSUS DIV. SEGMENT NO. 4042



SOURCE: RURAL INDUSTRIES 1969-70 BULLETIN NO. 8  
(PLANTING & HARVESTING ONLY) COMMONWEALTH BUREAU OF  
CENSUS & STATISTICS, CANBERRA, AUSTRALIA  
YEARS OF DATA INTERPOLATION BY DR. VILLANUEVA,  
REGIONAL ANALYSIS SECTION.

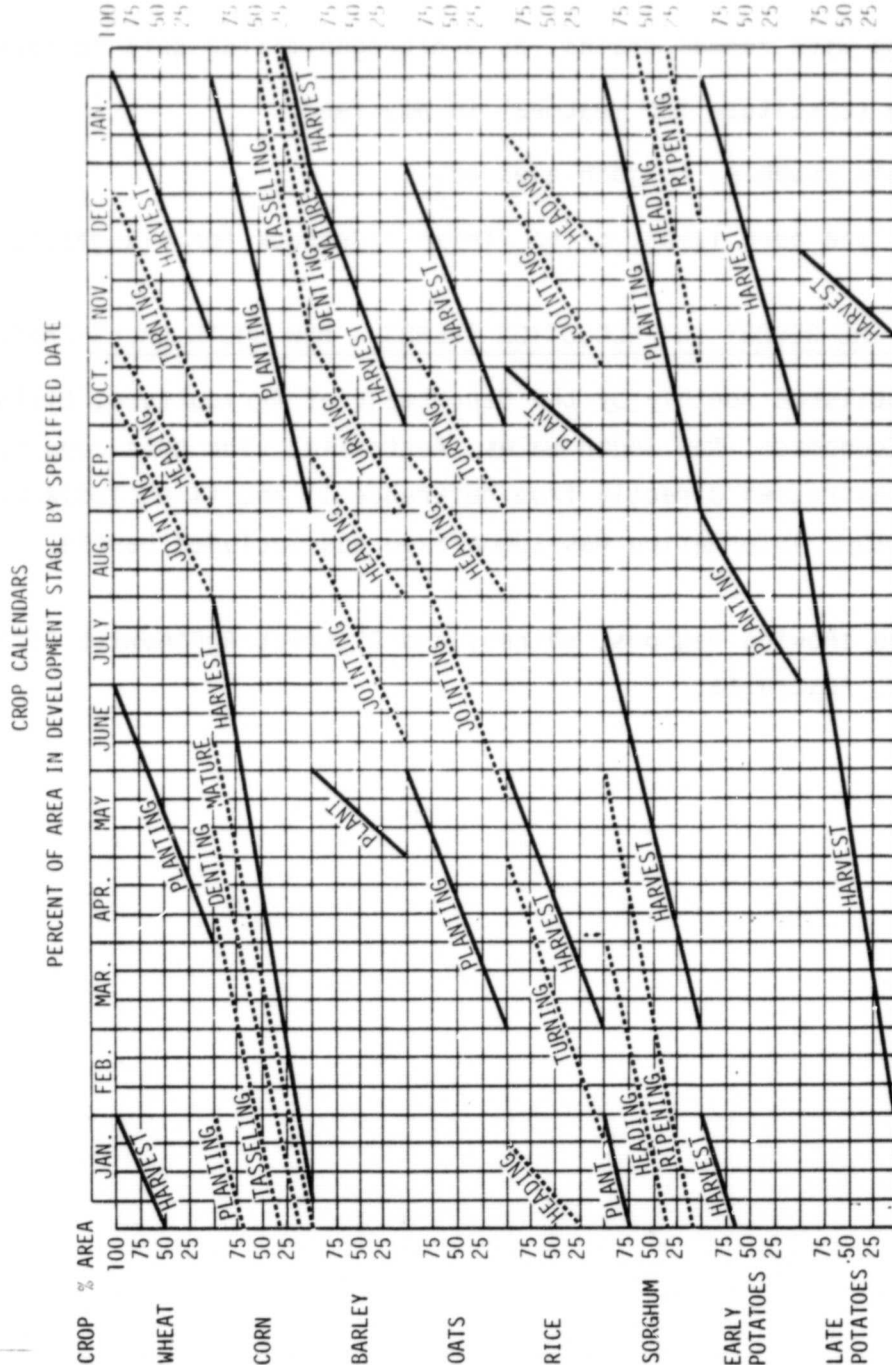
ESTIMATED YEARLY SHIFT IN DATES: + \_\_\_\_\_ DAYS.  
ADJUSTED FOR WEATHER: YES \_\_\_\_\_ NO \_\_\_\_\_

Figure 5-1.- New South Wales, Australia, historical normal crop calendar.



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OF POOR QUALITY

COUNTRY AUSTRALIA STATE, PROVINCE, OR SSR NEW SOUTH WALES  
CRD, DISTRICT, SHIRE, PARTIDO, OBLAST, OR CENSUS DIV. 4042 SEGMENT NO. 4042



SOURCE: RURAL INDUSTRIES 1979-70 BULLETIN NO. 8  
(PLANTING & HARVESTING ONLY) COMMONWEALTH BUREAU OF  
CENSUS & STATISTICS, CANBERRA, AUSTRALIA  
YEARS OF DATA INTERPOLATION BY DR. VILLANUEVA,  
REGIONAL ANALYSIS SECTION.

ESTIMATED YEARLY SHIFT IN DATES: + \_\_\_\_\_ DAYS.  
ADJUSTED FOR WEATHER: YES \_\_\_\_\_ NO \_\_\_\_\_

Figure 5-1.- Concluded.

#### 5.1.3.2 Lupins (ref. 10)

Lupin is a leguminous nitrogen-fixing crop. Its uses in Australia are as follows:

- a. A rotation crop with cereal grains, as a nitrogen-fixing soil improver.
- b. A high protein substitute for meatmeal in pig feed.
- c. For high protein stubble, to join ewes on.
- d. To supplement late born lambs, or to finish livestock for slaughter.

#### 5.1.4 SUMMARY OF THE REPORT ON PRODUCTION TRENDS - NEW SOUTH WALES (ref. 11)

Reference 11 is published monthly by the Department of Agriculture, Division of Marketing and Economics, New South Wales, Australia. For this report, material has been extracted directly from reference 11 and is enclosed within quotation marks; other information was summarized and included herein.

Figure 5-2 is a map showing regions, shires, and District Agronomist Offices in New South Wales, Australia.

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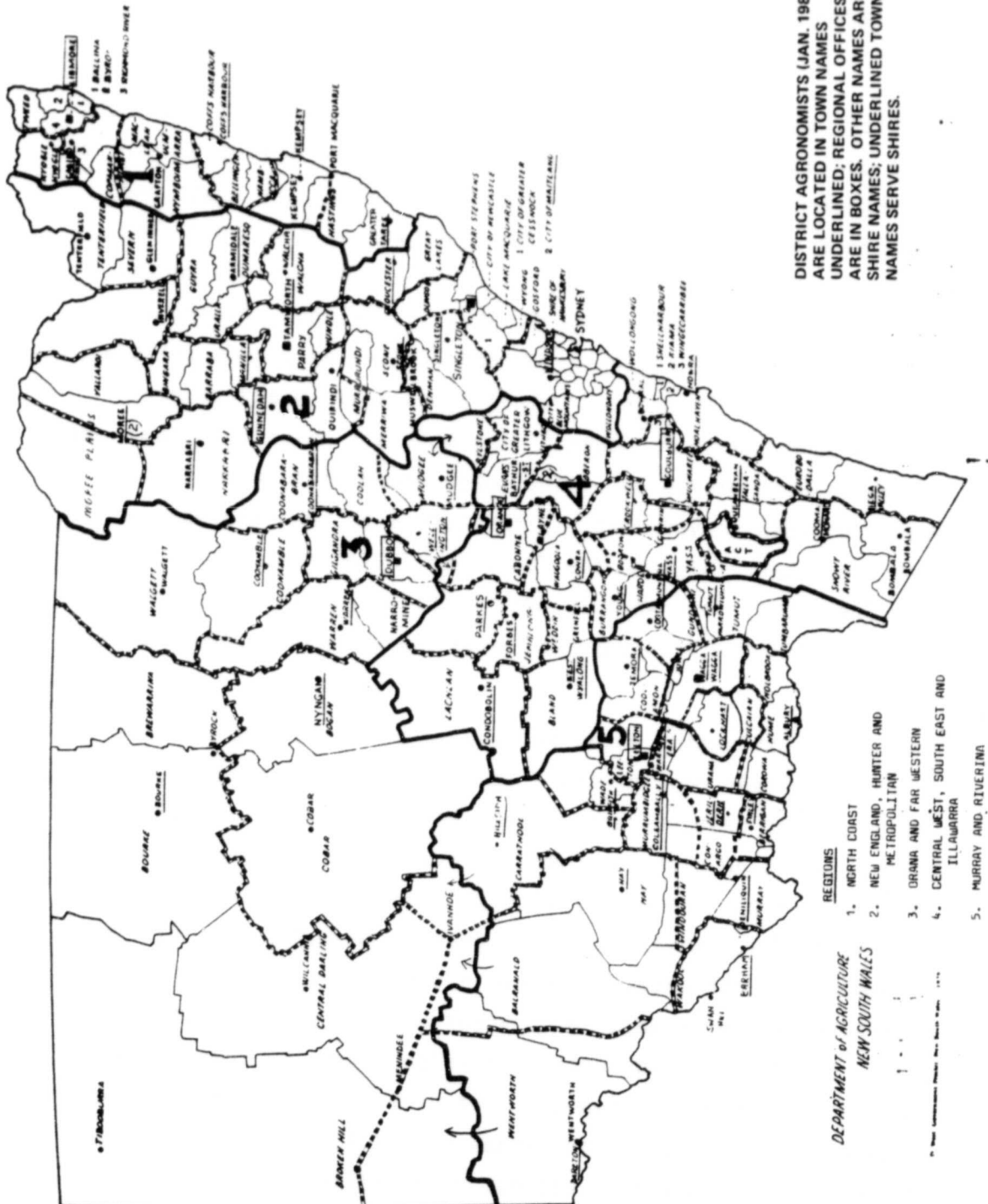


Figure 5-2.- Regions, Shires, and District Agronomist Offices in New South Wales, Australia, January 1982.

February 1981

Compilation Summary of part of the "New South Wales  
Report of Production Trends - New South Wales - February 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

Seasonal  
Conditions

"Rainfall was generally above to well above average in New South Wales during February, the main exception being the upper part of the Western Division. Showery conditions along the Coast and Tablelands early in the month were followed at the end of the first week by widespread heavy falls in all except the North-West. Around mid-month, most Coastal, Tablelands, Riverina and South-Western slope regions recorded further very good falls with scattered falls elsewhere. Rainfall was again heavy to very heavy around the third weekend in almost all districts though the far North-West missed out. The month ended with moderate to heavy recordings over most of the state with the heaviest and most consistent falls on the Coast and Tablelands. Conditions were frequently very warm to hot, particularly in the western half of the state with maximum temperatures mostly about normal elsewhere."

Pastoral  
Conditions

The drought situation eased in many areas due to the heavy rains in February over most of the state. These rains brightened prospects for pastures and winter crops. Growth of natural pasture was slow with not much yet available, but early sown oats and fodder crops responded quickly. Subclovers and lucerne also responded well. However, due to grazing demands, more rain will be needed in most areas to ensure a continuing supply of feed before the winter comes. Many areas of the Central Western slope, the Plains, and Western Division remain in poor to bad condition. Water supplies are a problem in the upper and lower Western Division and in many areas of the Northern Plains and adjacent areas where rain was not as abundant.

February 1981  
New South Wales

Pastoral  
Conditions  
(Continued)

There were 47 whole pasture and 5 part pasture protection districts declared this month, believed to be the highest ever, but the February rains should reduce this number.

Wheat, Barley, and Oats

"The February rains had encouraged land preparation for the winter cereal crops over a wide area. Preliminary estimates, assuming good rains for sowing are received, are that plantings will be greater than last year, especially for wheat. Sowing of oats for grazing purposes has started."

Winter  
Oilseed

The rains allowed additional land and fallow to be prepared. March and April rain will determine the area planted as well as the market prospects relative to winter cereals.

Summer  
Oilseeds

Soybeans

It is estimated that 17,000 hectares have been sown for the 1980-81 season. There was a reduction in acreages on the 1979-80 season of about 5000 hectares. The largest reduction was in the Macquarie Valley due to water shortages. On the other hand, sowings in the Namoi Valley are unexpectedly high with the Narrabri and Gunnedah Districts each reporting 2500 hectares. Sowings in the major Coastal Districts of Kyogle and Taree have also been considerably reduced. Crop prospects have been improved by rain in the coastal areas and irrigation in the inland areas.

Sunflowers

About 36,000 hectares were sown with 30,000 hectares in the Northern Districts of Moree, Coonabarabran, Gunnedah and Narrabri for the 1980-81 crop season. The February rains improved prospects, but the outcome will be determined by the March and April rains. Southern irrigated crops have developed well, but lake bed crop yields were disappointing.

February 1981  
New South Wales

Summer  
Grain

Grain Sorghum

Prospects improved with the February rains. Northwest area crops could yield up to 3 tonnes/hectare. The state could produce up to 150,000 tonnes from 120,000 hectares. Harvesting will begin in March.

Fiber Crops Cotton

Rain and the unexpected availability of irrigation water in the Macquarie and Namoi Valleys improved prospects. A higher proportion of the crop than expected received almost full irrigation, production may exceed the 1979/80 crop of 282,000 bales.

March 1981

Compilation Summary of part of the "New South Wales  
Report of Production Trends - New South Wales March 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

Seasonal  
Conditions

"Temperatures were mostly below average in the western areas of New South Wales during March but were mainly close to average in Eastern Districts. Mainly dry conditions prevailed west of the Tablelands, with the more consistent rainfall generally concentrated on the Coast and adjacent Tablelands. Southern and eastern parts of the state experienced rainstorms early in the month, followed the next week by mostly light to moderate falls in the southern inland along the Coast and adjacent Tablelands. The North-Eastern and South-Eastern corners and the Central Coast reported odd light to moderate rain mid-month followed the next week by light falls along the Coast, Central and Southern Tablelands and the North-Western slope. The last week of the month saw moderate to heavy rain over most of the state, with the heaviest falls east of the Great Dividing Range being in Northern Districts while the Western Division and Riverina fared best of the Western Districts. Most of the lower Western and western Riverina Districts had total rainfall near or above average as also did a few sections of the central and southern parts of the Coast, Tablelands, and Plains."

Pastoral  
Conditions

Where good follow-up rain to the February rain occurred, pastures and crops responded. The Northern Rivers, mid-North Coast and parts of the South Coast are now enjoying a good season, though by the end of the month pastures were drying out. Fodder crops showed some growth. Rains are needed in those areas mentioned but even more so in the Northern and Central Tablelands, Slopes, and Plains, and in the drought stricken Western Division. "Some reports indicate that this is the worst drought in living memory and pessimism is spreading as another bad winter is in prospect". Forty-three whole and four part pasture protection districts are

March 1981  
New South Wales

Pastoral  
Conditions  
(Continued)

declared for April. Corowa and Moss Vale Pastures Protection Districts were deleted from the drought list, but part of Wentworth District was added.

Winter  
Cereals

Wheat, Oats, and Barley

With the February rains, land preparations started, but unfortunately the March follow-up rains were insignificant except in the Southwestern section of the wheat belt. This year's crop is expected to be larger than last year's drought-affected crop.

Winter  
Oilseeds

Linseed, Rapeseed and Safflower

As a result of drought conditions, prospects for these three crops deteriorated rapidly in March. Rapeseed sowings will be substantially less than the 8000 hectares planted in last year's 1980-81 crop season. Linseed sowings will also be affected, but safflower still remains good, since it is sown later than rapeseed or linseed.

Summer  
Oilseeds

Soybeans

The average yield for the 1980-81 crop in the Northern areas was expected to be 1.5 to 2 tonnes/hectare. In inland areas in the North and in the Lachlan Valley, yields could average 2 tonnes per hectare with crops in the Macquarie Valley slightly higher.

Sunflowers

The 1980-81 crop of about 36,500 hectares should produce between 24,000 and 25,000 tonnes. Dryland production was severely affected in the northwest by seasonal conditions. Seventy percent of the state's crop is grown in this area. The majority was sown late, exposing it to moisture stress in March. Yields will depend on the extent of the drought conditions.



March 1981  
New South Wales

Summer  
Grains

Grain Sorghum

Harvest of the 1980-81 crop proceeded in March in the dryland and irrigated northern areas. Some regrowth occurred in the late sown crops. Best yields were around 5 tonnes per hectare but a considerable portion of the dryland crop yielded 1 to 1 1/2 tonnes per hectare throughout the northwest. Average dryland yield will most likely be less than 1 tonne/hectare because of the many failures caused by dry conditions. The total state yield is expected to be 150,000 tonnes.

Fiber Crops Cotton

Rain-grown (dryland) early maturing crops were being harvested in March. Returns did not generally cover production costs. Good yields were expected for the Gwydir and Namoi Valleys, and those in the Macquarie Valley will probably be better than anticipated.

April 1981

Compilation Summary of part of the "New South Wales  
Report of Production Trends - New South Wales - April 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

Seasonal  
Conditions

"Fairly settled weather prevailed over most of New South Wales during April. Temperatures were mainly above average over the greater part of the month, with odd hot days, but conditions turned cool over the last week of the period. Reasonable falls of rain were largely confined to the eastern half of the state and totals were above average for the month only on the Coast and Tablelands. Heavy falls on the Northern Tablelands, the North Western slopes and the eastern sections of the Central and Southern Tablelands caused minor flooding in several river systems".

Pastoral  
Conditions

The western half of the state had rain early in April. Even so the pastoral situation has deteriorated, and the greater part of New South Wales remained very dry to badly drought affected. Parts of the upper far west are presently holding on. Northern Coastal River areas and parts of the New England and South Coast are in reasonable condition. There are 42 whole and 3 part pasture protection districts declared for the month of May. Added to the list this month were Narrandera and Jerilderie; however, part of Grafton, all of Gloucester, Moulamein, and part of the Macquarie Districts were removed from the list.

Winter  
Cereals

Wheat, Barley, and Oats

Light to moderate rains were received in the wheat belt during April, mainly in the eastern areas. Nowhere near enough rain was received. Sowing plans are unsettled at this time as drier conditions and a lack of subsoil moisture are present. The longer the dry weather, the stronger the possibility of another below average winter cereal crop this season.

April 1981  
New South Wales

Winter  
Oilseeds

Rapeseed

Areas sown are negligible so far, growers are reconsidering their sowing intentions and varietal selections. As a result of the adverse weather conditions, sowings will be well below last season's 8000 hectares.

Linseed

Sowing starts later for this crop than for rapeseed, but it will also be affected by the drought conditions.

Safflower

Sowing prospects remain best for this crop. If the rains arrive in time, seeding can take place from late May in the Southern Districts to the end of July or even early August in the northern and western areas.

Summer  
Oilseeds

Soybeans

The soybean harvest for the 1980-81 crop started in April with predictions of 34,000 tonnes produced from an estimated 18,300 hectares. Yields in northern coastal areas should average between 1.5 and 1.2 tonnes/hectare, considered satisfactory due to the weather/moisture stress during grain fill. The northern inland districts should have average yields of slightly better than 2 tonnes/hectare with the best crops producing 4 tonnes/hectare. In the Macquarie Valley, yields of 2 to 3 tonnes/hectare are the range; water supply problems restricted sowings severely. The Lachlan Valley and south-western irrigation area should yield an average of 2 tonnes/hectare.

Sunflowers

Dryland production has been severely affected by the weather conditions in the northwestern agricultural areas. Seventy percent of the New South Wales crop is grown in this area, most

April 1981  
New South Wales

Summer  
Oilseeds  
(Continued)

of which was late sown exposing it to moisture stress during the dry March-April period. Yields are variable due to the weather late sowings were exposed to frost injury. Irrigated south western crops did well with yields up to 3.5 tonnes/hectare; the average is expected to be between 2 and 2.5 tonnes/hectare. Coonabarabran dryland crops did well again; the total average yield will be less there, but the December/January sowings should average 0.7 tonne per hectare.

Summer  
Grain

Grain Sorghum

Harvesting is continuing. Conditions during April were reasonably satisfactory; at this point in time, production is expected to be no more than 150,000 tonnes from some 100,000 hectares planted.

Fiber Crops Cotton

Irrigated cotton was picked in April, following the March harvest of the early-maturing rain grown (dryland) crops. The Gwydir Valley should have high average yields exceeding 5.5 bales/hectare. At the end of April the first pick in the Namoi Valley was half completed. Approximately 9,700 hectares were being harvested in the Macquarie Valley; the first pick is 70 percent complete, and yields are higher than earlier estimates.

May 1981

Compilation Summary of part of the "New South Wales  
Report of Production Trends - New South Wales - May 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

Seasonal  
Conditions

"Mostly mild to cool weather prevailed in New South Wales during the first 3 weeks of May. Rainfall was fairly spasmodic during that period, being mainly light to moderate with the better recordings in central and southern districts though northern and coastal centers received some useful falls at times. From about the 21st of the month, however, widespread rain occurred on several days with heavy to very heavy falls along the coast and in the upper Western Division but mainly moderate falls elsewhere. Further general rain developed over the last few days of the month, with heavy to very heavy registrations in central northern districts and parts of the highlands, and useful recordings in the monthly registrations were above average in all meteorological districts, particularly in northern inland and far west areas."

Pastoral  
Conditions

The germination and good conditions for pasture and fodder crops sown after the February rains was due to the mild conditions in May and the well spaced rains in the latter part of May. The pastoral conditions have improved considerably. However, the situation for cattle feed is less promising, and cattle are still being maintained by supplementary feeding. Although the May rains were the best since February, the drought has not been broken. Stockwater supply is still poor to critical in many areas. Areas more than holding their own are much of the North Coast, Southern Slopes, Plains, Riverina, and Western Division. There are a total of 44 whole drought-declared pasture protection districts and 5 part districts, with Albury and Gundagai added and parts of Hume and Tenterfield. Weeds haven't been a problem as of yet but their growth will now accelerate as a result of the rain received in May.

May 1981  
New South Wales

Winter  
Cereals

Wheat

Rains were heavier in the northern and central areas than in the south. There were follow-up rains at the end of May and in early June that were almost as heavy as in the north. Where reasonable rains were received in early May, up to 10 percent of the wheat crop has been sown, mainly in the eastern Riverina and a section from near west Wyalong to Parkes. Little additional sowing occurred from May 22-24 to the end of the month due to wet soils. A dry period of 3 to 4 weeks is now needed to allow the crop to be sown, especially on the heavy soils. Subsoil moisture is nearly nonexistent; good spring rains are vital to a successful wheat crop this year. Tentative estimates are for over 3,500,000 hectares compared with last years 3,430,000 hectares (3,345,000 hectares sown for grain).

Oats

Much of the oat crop was sown early, either dry or, in the south, on the February rains. The early sown crops are growing rapidly and should benefit from the late May rains. Total planted area could be greater than last year's estimated 730,000 hectares (360,000 hectares sown for grain).

Barley

Sowings are in a similar condition to the wheat crop. Sowing is continuing but the soils need to dry out especially in the north before all the planned area can be sown. An area greater than last year's 485,000 hectares is expected.

Triticale

Not much information as of yet, but it appears more will be planted this year than for last year's crop.

May 1981  
New South Wales

Winter  
Cereals  
(Continued)

Lupins

More sowings were made in late May, mainly in the central and southern areas. The small areas sown early have established well. These areas were sown in April. It is too late now to sow for optimum yields, so the total sown area will be significantly reduced compared to the 15,500 hectares estimated sown last year.

Winter  
Oilseeds

Linseed

Growers this year have shown little or no interest in this crop; total area will be very low and may be less than 1000 hectares.

Rapeseed

Sowings made in April and May had good germinating conditions and appear to be doing well. The southern half of New South Wales had a late break of season. The rapeseed area could be as low as 3,000 hectares compared with last season's 8,000 hectares.

Safflower

No sowings were reported in May except for some in the far south-west. Most sowings usually occur in late June and during the month of July. Weather conditions and grower's cereal sowings will affect the safflower area. If wet in the northern areas, some growers may substitute safflower.

Summer  
Oilseeds

Soybeans

Harvesting was interrupted by the May rains, especially on the coast. Most of the crop on the coast though has already been harvested. Inland harvest was 70 to 90 percent complete, with high yields expected. Under irrigation, yields were as high as 4.5 tonnes/hectare, but in some places, due to restricted water availability, yields may be as low as 1.8 tonnes/hectare.

May 1981  
New South Wales

Summer  
Oilseeds  
(Continued)

Sunflower

Most of the crop was late sown throughout the state. "It therefore suffered from drought conditions during most of the vegetative period and into flowering, and with the May rains, it will now be exposed to cool to cold and humid weather which will delay harvesting and as well expose the crops to fungal attack and grain deterioration. The majority of the state's sunflower areas is in the north-western agricultural districts where yield prospects are poorer than previously believed".

Summer  
Grain

Grain Sorghum

Harvesting of the 1980-81 crop was virtually complete by the end of May. Drought conditions during critical stages have reduced the estimate to 115,000 tonnes from a harvested area of some 100,000 hectares.

Cowpeas

Very low yields were obtained on the dryland crops, only about 1/2 tonne per hectare. Very little irrigated cowpeas were sown. About 2500 hectares were sown for grain and possibly 5,500 hectares for forage, mainly on the coast.

Fiber Crops Cotton

Harvesting was well advanced before the late May rain. The first pick was finished and the second pick was proceeding well in the northern areas. Grades will suffer some, and there will be some losses of seed cotton due to the rains, but yield prospects remain high.



June 1981

Compilation Summary of part of the "New South Wales  
Report of Production Trends - New South Wales - June 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

Seasonal  
Conditions

"June weather was seasonally cool to cold in all districts, with a few brief milder periods. Coastal temperatures during the month were generally within a few degrees either side of average, with temperatures inland mainly below average. However, a wide-spread cold snap developed late in the month. Total registrations for June were above normal in southern inland districts but below average in most other meteorological districts. The coast fared worst when compared with the normal monthly rainfall pattern. General rain occurred early in the month, with some heavy falls in the northern inland. The Ranges and South Coast recorded useful falls up to mid-month with further light to moderate registrations in most other places. The second half of the month saw odd heavy falls on the Central and North Coast but lighter elsewhere with variable rain over the last week; moderate to heavy registrations were reported on parts of the Southern Tablelands and South-Western Slopes as well as in some southern and northern border areas. The upper far west in particular remained dry over the final week of the month. Mostly minor-to-moderate flooding occurred over the first three weeks of June along the Paroo, Warrego and Culgoa Rivers, while significant rises were noted at the same time along the Barwon-Darling Rivers, with only minor flooding of low-lying areas. Snow fell in the Snowy Mountains and nearby Western Slopes extending to the higher parts of the Central Tablelands and Central West Slopes. Frost level minimum temperatures were reported frequently in the colder districts of the state".

Pastoral  
Conditions

Pasture growth was slowed by the cold weather, even with the useful rainfall in June. Moisture was sufficient to maintain progress of winter-growing pasture species and cereal crops sown for

June 1981  
New South Wales

Pastoral  
Conditions  
(Continued)

feed. The situation is still not the best in northern inland areas. Water supplies are still low in areas that have not had heavy rains since February, but no serious water shortages exist except in remote places. Only T.S.R.'s and stock routes in the Coonabarabran, Hillston, Cobar, and Broken Hill Districts reported no improvement in feed and water supplies. Pasture protection districts removed from the drought-declared list this month include: Balranald, Bourke, Coonamble, Deniliquin, Narrandera, Urana, Wagga, and Walgett areas and the declared parts of Jerilderie and Danman-Singleton. Thirty-six whole and three part districts were redeclared as drought-affected for July.

Winter  
Cereals

Wheat

Rain continuing through the first half of June delayed planting of winter cereals, as the last two weeks have been relatively dry; sowing has resumed in most areas. By the end of the month in the Southern Districts, 80 percent of the wheat crop had been sown; but in the northern and central districts, only around 50 percent of the wheat has been sown. May sowings are progressing well. West Wyalong District had the best beginning in many years. Weeds will be a problem this year. Inadequate cultivation to control weeds was due to the late start in the rains; consequently, there has been an extensive use of herbicides in the seedbeds this year.

Oats

The area sown to oats for grain, hay, and greenfodder could exceed 600,000 hectares. The growers may have an increase in the proportion for grain this year also because of the late start in the season in the central and northern areas. May and June rains boosted crops planted after an earlier rain in the southern areas.

June 1981  
New South Wales

Winter  
Cereals  
(Continued)

Barley

"Should the wet weather continue into late July and August in northern and central districts of the state, there could be a switch of unsown wheatland to barley. However, if July is fine, then the area devoted to barley will be much the same as last year or possibly a little higher. Sowings last year totaled some 485,000 hectares."

Triticale

Triticale is still only a minor crop in New South Wales, but the interest in it is increasing. The area could be around 60,000 to 70,000 hectares with half of this sown by the end of June.

Lupins

Lupins were the hardest hit of the winter crops by the late break of season. Sowings may only reach 50 to 60 percent of the 1980 area, with much of this sown later than it normally would have been sown, but if spring rains are adequate, production could still be greater than that of last season. Last season, more than 20,000 hectares were sown.

Winter  
Oilseeds

Linseed

Farmers show only limited interest in linseed this year; therefore, sowings may not have reached even 1,000 hectares.

Rapeseed

Sowings were virtually complete in June. The amount sown could be as low as 3,000 hectares due to the late break of season.

Safflower

Most sowings will be made in June and July. The weather and status of the wheat crop plantings will affect the safflower-sown area.

June 1981  
New South Wales

Summer  
Oilseeds

Soybeans

The end of the 1980-81 soybean harvest was affected by the weather, but little remains in the field. Production is estimated at 34,000 tonnes from 18,000 hectares.

Sunflowers

Most of the state's sunflower crop was planted late and was affected by the drought conditions during and after planting. The moist May to June weather affected the harvest and has caused grain deterioration and a fungus problem. Yields are lower than anticipated; the 36,500 hectares planted may only produce around 20,000 tonnes.

Summer  
Grain

Grain Sorghum

Harvest of the 1980-81 crop is complete. Production is around 120,000 tonnes, less than anticipated but not unexpected because of the drastic cutback after the long drought.

Fiber Crops    Cotton

Continuing wet weather has delayed the completion of the current picking. About 80-90 percent of the crop has been picked; ginning should continue well into July. Fiber quality was adversely affected by the wet weather. The wet weather has also delayed field preparations for the 1981-82 crop.

July 1981

Compilation Summary of part of the "New South Wales-  
Report of Production Trends - New South Wales - July 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

Seasonal  
Conditions

"Cool to cold weather with widespread and frequent falls of rain prevailed over most of New South Wales during July, particularly in the first half of the month. Total registrations were above average in all except the coastal meteorological districts, with the best results occurring in the Western Division, Plains, and Slopes. The widespread rain eased during the third week, apart from the South-Western Slopes and Riverina. Further falls were recorded over most Central and Eastern Regions during the last week with the heaviest rain on the South-Western Slope again. Light to moderate rains were experienced in the Western Division at this time. Frosts were quite numerous in susceptible areas. Snow fell on the Snowy Mountains and on occasions on many parts of the Central and Southern Tablelands and as far north as the highlands around Coonabarabran."

Pastoral  
Conditions

Pasture growth was retarded by the colder frosty weather in most places in July, though in most places the pastoral situation is satisfactory. In a number of southern inland districts, local flooding occurred due to heavy rains in July.

Pasture protection districts removed from the drought-declared list include: Albury, Brewarrina, Gundagai, Hay, Milparinka, Wanaaring, Wilcannia, and also parts of Hume and Tenterfield Districts. Twenty-five whole and five part districts were redeclared for August. This is lower than the 34 whole and 3 part districts for August 1980.

Winter  
Cereals

Wheat

The wheat crop in the state of New South Wales was substantially sown by the end of July. The low lying and difficult soils were too wet to plant. The eastern Riverina and South-Western Slopes

July 1981  
New South Wales

Winter  
Cereals  
(Continued)

Districts received too much rain. The western edge of the wheat belt benefited greatly from the above-average rains. Many areas, particularly in the northwest, have had significant problems with emergence.

Some growers have resown these failed crops, but others couldn't due to the very wet conditions. Some individual growers may be hard hit, but for the entire wheat crop, it will have had a small effect. Mites and weeds also have been a problem; farmers have been spraying.

Oats

Present indications are that there has been a significant increase in planted oats area, with a greater proportion of this harvested for grain and used as feed reserves on the farm. Crops that were early sown and survived the late May rain are providing considerable quantities of feed. Plantings are up from last year, from 700,000 hectares in 1980 to an estimated 800,000 hectares.

Barley

Barley area has increased this year. Early estimates are for 550,000 hectares compared with last seasons 500,000 hectares. In the Riverina and South-Western Slopes, scald and net blotch are in many crops. This is not expected to have a serious effect on the total production though.

Triticale

Triticale sowings increased this year, but triticale is still only a minor crop in New South Wales. Estimated area sown is 77,000 hectares compared with 25,000 in 1980.

July 1981  
New South Wales

Winter  
Cereals  
(Continued)

Lupins

At the end of July, the lupin crop generally looked good, despite the late sowing and wet weather. This year's area is down from 23,000 hectares last season to 18,000 hectares this season.

Winter  
Oilseeds

Linseed

Adverse weather prevented further sowings. It appears that 1,000 hectares have been planted to linseed in the state of New South Wales.

Rapeseed

Adverse weather also prevented any further sowings. It appears 4,500 hectares were planted. The crop in the main growing area has been attacked by red legged early mites but appears to be making good progress. Advanced crops were emerging from the rosette stage and were developing stems at the end of the month. A very high proportion of the crop has a black leg foliar infection.

Safflower

There is an increased interest in sowing safflower in the late sowing areas as the winter cereal sowings were not completed in these areas due to the continuing rains. These areas are the North-West and North-Central Plains. Sowings are predicted to be at least 10,000 hectares.

Summer  
Oilseeds

Soybeans

Little action occurring at this time. The harvest for the 1980-81 season was completed in June.

Sunflowers

Harvesting of the 1980-81 crop had still not been completed by the end of July due to adverse weather and some late sowings on

July 1981  
New South Wales

Summer  
Oilseeds  
(Continued)

the Queensland border area. Midwinter harvesting increased the demand for grain drying.

Interest is developing in using early-sown sunflowers as an alternative for late-sown winter cereals, but unless late spring/early summer soil moisture is good, prospects for good yields from such late sowings are poor.

Summer  
Grain

Grain Sorghum

Estimates for the 1980-81 harvest, just completed, are 125,000 tonnes from a harvested area of about 100,000 hectares. July rains encouraged optimism for next season, but export prices have Grain declined so the area to be planted for the 1981-82 season is unknown at this time.

Fiber Crops Cotton

Harvest of the 1980-81 crop was seriously delayed even further by the July rains. This has resulted in some quality loss, yield loss, and some abandonment of the second pick. The Macquarie Valley has the greatest delays. The northern growing areas have the least delays. Yields have remained very good considering the weather and water supply difficulties. Little cotton remained to be picked at the end of July.



August 1981

Compilation Summary of part of the "New South Wales  
Report of Production Trends - New South Wales - August 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

**Seasonal  
Conditions**

"August weather in New South Wales was seasonally cool to cold, with temperatures mainly below average, though it was often milder along the coast. General rain continued over the state early into August with inland Southern and South-Western Districts receiving the best falls. The following week also saw further widespread though mainly light falls, with the South-Western Slopes and Riverina again experiencing the higher registrations. Light to moderate rains occurred over the state about mid-month, with the better recordings again in southern areas. Southern sections of the Slopes and Tablelands reported useful rain late in the month with odd heavy falls in the Northern Rivers, Northern Tableland, and Southern Tableland Districts. The last few days of the month brought widespread moderate to heavy rain in Southern Districts but light to moderate falls elsewhere. Despite the frequent falls, total monthly registrations were above average only on the South-Western Slope, Riverina, and Southern Tableland and well below normal in most other districts particularly on the coast and upper Far West and North-West Plain. Flooding persisted in the Murray and Edwards Rivers during the month."

**Pastoral  
Conditions**

Pasture growth was retarded in many areas of the Northern Tableland and Coast by cool to cold and often frosty weather and a lack of rainfall. Strong winds dried out existing feed. The frequent rains over most of the state enabled grazing crops to grow for a good part of the month, but then later strong winds slowed that down.

Areas deleted from the drought-declared districts were: Broken Hill, Dubbo, Narrabri Districts, young pasture protection

August 1981  
New South Wales

Pastoral  
Conditions  
(Continued)

districts, and the following declared parts: Canoba, Hillston, Moree, Pilliga, and Wentworth. Parts of Forbes, Molong, and Tamworth were removed; however, remaining parts of those pasture protection districts were left on the list. Tenterfield was added to the list for September. Eighteen whole and four part districts were redeclared for September.

Winter  
Cereals

Wheat

Central and northern crops had sunny weather, whereas southern crops received above average rain, causing waterlogging in some areas. In order for the yield potential to be maintained, satisfactory rainfall is needed over the wheat belt this month. Some northern crops in the area around Mungindi-Weemelah are severely moisture stressed. The Central West, South-Western Slopes, and Eastern Riverina are well-off. Most crops have sufficient subsoil moisture for several more weeks growth. Waterlogged areas include the Slopes area between Cowra and Albury; their yield potential has dropped to slightly below average. Areas sown in the May rains have done well due to favorable conditions since then. The May-sown area is an arc between West Wyalong and Parkeş. Many crops have been sprayed for weeds. The earlier estimate of 7,000,000 tonnes from 3,575,000 hectares is much too high. The crops though should be well over 5,000,000 tonnes.

Oats, Barley, Triticale

Similar comments apply to these crops as mentioned for the wheat crop.

Oats

Oats have provided good grazing, but closing off for grain recovery is widespread. Estimate of hectares sown is 863,000 for all purposes or 583,000 hectares sown for grain.

August 1981  
New South Wales

Winter  
Cereals

(Continued)

Barley

Estimate of hectares sown is 650,000 for all purposes or 617,000 hectares sown for grain.

Triticale

Area planted is estimated at 77,000 hectares which is three times that of the 1980-81 crop year.

Lupins

Spring will have to be longer than usual for lupins to meet their yield potential. Most crops were sown later than recommended, and the development of the southern crops has been slowed down by the cold, wet overcast weather.

Winter  
Oilseeds

Linseed

Satisfactory progress was made by the small crop of linseed.

Rapeseed

All areas are flowering. Black leg disease is causing concern in some areas, but generally rapeseed is showing considerable promise.

Safflower

A substantial number of plantings have been made in the Northern and Western Plains and upper Darling-Narran areas. Total sowings could actually be above the estimate and might even reach 20,000 hectares. Most of the crop was sown late and a large part on inadequate subsoil moisture to assure good growth during the spring months.

Summer  
Oilseeds

Soybeans

Soybean sowings will be limited by the water allocations from the North-Western Rivers, but the Macquarie Valley should have an increased number of sowings.

August 1981  
New South Wales

Summer Sunflowers

Oilseeds

(Continued) Rain-grown (dryland) sowings on land unsown to winter cereals began in August. In the past, these sowings have had very poor performance in the southern wheat belt. This year's crop will be heavily dependent on spring rains in the northern areas where the subsoil moisture is frequently deficient.

Grain Sorghum

Strong interest is shown to grain sorghum this season because of the continuing dry weather in the north that reduced wheat sowings. Grain sorghum could be planted in these areas. The south has over-wet conditions that could reduce the wheat yields; there also, grain sorghum is a likely alternative. The amount to be sown will not be known until October, but it is expected that an increased area will be sown.

Fiber Crops Cotton

Land preparation is well advanced for cotton plantings in the 1981-82 season. August was much drier than June and July. Water allocations for August were announced: 85 percent in the Macquarie Valley and 55 percent in Gwydir Valley. In September, the water allocation is 33 percent for the Namoi Valley.

September 1981

Compilation Summary of part of the "New South Wales"  
Report of Production Trends - New South Wales - September 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

Seasonal  
Conditions

"Conditions during September in New South Wales were mainly warmer and drier than usual. Southerly winds in the first and last weeks often kept temperatures below average, but over the rest of the month, due to northerly airflows, both minimum and maximum temperatures were mostly above average. General light to moderate rainfall in the first few days of the month, with odd heavy recordings in the Northern Rivers area, was followed by virtually dry conditions until light to moderate falls occurred late in the third week in most eastern areas. Very welcome statewide registrations were received about 26th/27th of the month with heavy falls over much of the area west of the Tablelands and especially in southern inland areas. Total monthly rainfall was below average in all but the lower Western Division and Western Riverina. Flooding which had continued along the Murray and Edwards Rivers since late July eased towards the end of the month."

Pastoral  
Conditions

The dry weather with strong winds tended to further dry out pastures. Some recovery should occur following the rains received late in the month. Many sections of the Central and South Coast deteriorated again and water supplies are diminishing in these areas. The northern and central slopes have diminishing water supplies. Water supplies are also diminished for the Southern Tablelands and several areas of the Far West. Only a few places however are really short of water.

Areas deleted from the drought-declared list were the Condobolin and Mudgee Districts and parts of the Forbes and Molong Districts. However, the added list included Gloucester and Port Macquarie and parts of Grafton and Moss Vale Districts making a total of 16 whole and 6 part areas drought-declared for October, 1981.

September 1981  
New South Wales

Winter  
Cereals

Wheat

Yield prospects in the north declined drastically due to the hot and dry weather. The rain was too late (late September) to improve crops north of about Gunnedah, while crops west of the Newell Highway are in poor condition. Gunnedah-Tamworth area crops are mostly later than normal and still have reasonable yield prospects. They will, however, need substantial rain in October.

Rain came too late in the Central-West to maintain yield potential. Much of the western fringe from Condobolin to Coonamble have failed; further east the crops are in better condition though yields will most likely be below average. Southern inland crops have a good to excellent yield potential. The Riverina and South-Western Slopes in particular have had a very good season so far this year, despite some areas suffering from earlier waterlogging.

The key to the state's wheat crop is now rainfall in October. Decent falls in October could produce a crop of near 5,000,000 tonnes compared with the drought-affected 2,865,000 tonnes of last season.

Oats, Barley, and Triticale

Many of the wheat comments also apply to these crops, although the barley and triticale crops appear to be doing a little better than wheat in the North. Rainfall will determine the outcome of this season's crop.

Lupins

Lupin crops had a significant reduction in yield potential from the start due to their late sowing. Southern crops are doing well and could produce good crops provided enough rain falls in October.

September 1981  
New South Wales

Winter  
Oilseeds

Linseed

Linseed was in the flowering stage during September. The crop was attacked as usual by the bollworm. Rain is needed to bring yield prospects up to at least an average level. About 1,000 hectares are under linseed.

Rapeseed

An estimated 5,000 hectares are under rapeseed. They were in the flowering stage throughout September. Rain is needed for well-filled grain and to enhance yield potential in the generally moderately developed crops.

Safflower

An estimated 16,700 hectares were sown. Generally the crop was planted late in the drier sections of the wheat belt and in the Western Division. Most crops were sown on limited moisture and are in immediate need of rain with additional rain to assure that satisfactory yields are obtained.

Summer  
Oilseeds

Soybeans

Sowing intentions will be clear in November following grower response to any October-November rainfall. Coastal intentions will probably be clear later than that, because of later planting on the North Coast. Considerable sowings are anticipated for the Coast, but probably restricted in Northern inland irrigation areas due to limited water allocations. Large increases are expected in the Macquarie Valley due to increases in water allocations over last season. Also increases are expected in the Lachlan, Murrumbidgee and Murray Valleys.

Sunflowers

Sowings started in August. Many early sowings had to be postponed in August and September due to dry conditions. Most of the

September 1981  
New South Wales

Summer  
Oilseeds  
(Continued)

sunflowers that would have marginal prospects in even the best of depend on October rain. Rain in October will have a substantial times remain unsown. Survival of the early planted sunflowers effect on the amount sown in the Tablelands and Slopes Districts.

Summer  
Cereal

Grain Sorghum

Significant sowings were made in the northern inland during September. A large increase in sown area is expected, in part to utilize areas that were not planted to the planned wheat crop. Plantings will be larger this year than last year - 175,000 to 200,000 hectares compared with last year's 140,000 hectares.

Fiber Crops Cotton

Seedbed preparation proceeded rapidly and planting started in the Macquarie Valley in mid-September. Other areas followed later. The late September rains interrupted sowings, but initial establishment was favorable.



October 1981

Compilation Summary of part of the "New South Wales  
Report of Production Trends - New South Wales - February 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

Seasonal  
Conditions

"Temperatures were mostly average to below average for the middle month of spring. Early October saw widespread moderate falls of rain, with the highest recordings on the Southern Tablelands but very little on the dry South Coast. Northern District received further good falls the following week, especially on the Slopes and Tablelands. Over the next week, moderate to heavy falls occurred in all districts, including the South Coast which received some of its best rain for many months, while the heaviest falls were again experienced in northern areas. Good general falls continued at the end of the month with the Hunter Valley this time receiving very welcome registrations."

Pastoral  
Condition

The consistent rainfall has improved the pastoral outlook in all districts except some northwestern and southern coastal areas. These areas should improve due to late rain in those areas. Sheep have feed in many areas now, but it is not yet suitable for cattle. Eight whole or parts of pasture protection districts were deleted from the drought-declared areas for November. Fourteen (7 whole and 7 part) districts were redeclared.

Winter  
Cereals

Wheat

Most crops in the southern third of the wheat belt had adequate rainfall at the start of October, but northern and central parts of the wheat belt needed rain urgently to maintain yield potential. By the end of the month, the situation was reversed. Farmers in the Riverina need rain urgently. Substantial crop failures have occurred in the Walgett, Nyngan, and Condobolin Districts, and in the northwest western fringe area, though they are not as bad as the previous year. Harvest had begun in the

October 1981  
New South Wales

Winter  
Cereals  
(Continued)

early maturing northern wheat areas before the late October rains.

Oats, Barley and triticales

The wheat comments, for the most part, also apply to the oat, barley, and triticales crops. Some early oats and barley have been harvested in the northern and central areas. The main harvest will really get underway in November. Many oat crops lodged, which means lower yields. Barley crops are quite promising.

Lupins

Lupins have improved to some extent following the October rains. A crop of 15,500 tonnes is expected.

Winter  
Oilseeds

Linseed

At best linseed yields appear average. The crop benefited from rain in the Central-Western and Western Districts.

Rapeseed

The rain in October was mostly insufficient for filling out the crop; although, in the central western areas, soil moisture conditions are better and there should be a satisfactory grain finish there. Yields aren't likely to exceed 1 tonne/hectare.

Safflower

Crops generally are in the preflowering stage and greatly benefited from the rainfall. More rain for good yields is needed in November. Rutherglen bugs were reported in most areas; they could seriously reduce yields unless their numbers are controlled.

October 1981  
New South Wales

Summer  
Oilseeds

Soybeans

Land preparations began in the northern coastal areas where recent rains were received. The northern inland area has been allocated limited water supplies; however, with increased sowings in the Central-West and the North Coast, it is expected that the New South Wales sowings will be the same as last season.

Sunflowers

Early crops in the northern areas benefited from the recent rains. Many crops are at the budding stage. Rutherglen bugs are a problem. Rains, particularly in the Coonabarabran area, improved late sowing prospects.

Summer  
Cereals

Grain Sorghum

Approximately half of the sorghum crop was planted following the rain in the northern growing areas. The remainder should be sown by mid-November. The expected total area is 170,000 to 200,000 hectares. The early sown crops are progressing well.

Fiber Crops    Cotton

Planting was about 84 percent complete by the end of October. Midmonth, the cool wet weather interrupted planting. Establishment appears satisfactory. The rains improved soil moisture and water supplies particularly in the north. The planted area should exceed 71,000 hectares, with 500 hectares grown dryland (rain grown). The largest increase in plantings is reported in the Gwydir and MacIntyre/Barwon Valleys; although, all areas reported increases.

November 1981

Compilation Summary of part of the "New South Wales  
Report of Production Trends - New South Wales - November 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

Seasonal  
Conditions

"At the start of November, temperatures were mostly below average, but they then fluctuated markedly up to mid-month. Later they rose in southern areas, although they were mainly below average in the north-eastern half. Moderate to heavy rain fell early in the period in many centers, the main exceptions being the Riverina, South-Western Slope, and the Western Division. The North and South Coast in particular, as well as some other coastal and Tableland areas, recorded moderate to heavy rains during the following week. Substantial registrations were received over a wide area in the third week with the best falls on the Coast and light falls across the state's northern inland districts. The final week saw widespread good recordings over many northern and central sections of the Coast and Tablelands with lower to light registrations in most other parts of the state. Total registrations for the month were below average only in the Riverina, the Lower Western Division, and the South-Western Slope."

Pastoral  
Conditions

The pastoral situation was improved this month by widespread useful-to-good rains with warmer conditions. Most of the state is enjoying a reasonable-to-good season except a large section of the Western Division where the conditions are unsatisfactory and a few areas in the Southern Tablelands and South Coast that have not fully recovered from the drought. Except for some areas in the Far West, water supplies are ample to adequate. Haymaking has been extensive with high production. Six pasture protection districts (4 part districts, 2 whole) were redeclared as drought areas, but 4 whole and 5 part districts were deleted from this month's list.

November 1981  
New South Wales

Winter  
Cereals

Wheat

In inland cereal districts, November was unusually cool. Most northern districts received significant though patchy rainfall during the month. The southern half of the state was drier, though rain did fall. The northern half of the state began harvesting by mid-November, and some south western districts began harvesting a week later.

The harvest was disrupted by rain, causing downgradings of earlier deliveries of prime hard. Harvest commenced in the Warren-Narromine-Trangie area at the end of the month, delayed due to the rain. This area has a good deal of weather-damaged grain, but improved yields from the rain. The same is true for the Gunnedah-Tamworth area in the north to the Murrumbidgee River in the south. Yield potential has decreased though in the Riverina due to dry October and November weather. Good crops exist for the South-Western Slopes. Irrigated wheat has not been quite as good in some districts as anticipated.

Barley

By the end of November a good proportion of the New South Wales barley harvest was completed. Most areas reported very good yields.

Oats

Most of the crop had been harvested by the end of November. Many areas have reported above-average yields. The earlier estimate of 570,000 tonnes most likely will be exceeded.

Triticale

Crop yields are doing well in northern areas but not as well as anticipated in some central and southern areas.

It is not known yet if the estimate of 75,000 tonnes will be achieved.

November 1981  
New South Wales

Winter Cereals

(Continued)

Lupins

Yield potential has improved with the cool November weather. The West Wyalong District harvested some very good crops.

Winter Oilseeds

Linseed

The crop is well advanced in maturity. It is expected that about 1,000 hectares will be harvested at 0.6 tonne per hectare.

Rapeseed

Harvest is underway. Yields were lower than expected in southern areas due to poor spring weather conditions for grain finish. In Central-Western Districts, late rains were generally favorable. Yields may be only 0.8 tonne per hectare.

Safflower

In wheat areas, the safflower crops benefited from the October-November rains, but elsewhere the benefit was only temporary in nature. Flowering occurred in November. The earlier crops are near completion. Rutherglen bugs have reduced yields considerably.

Summer Oilseeds

Soybeans

Planting began in November in the Murray Valley and later elsewhere. Sowings will only be limited in the Gwydir and Namoi Valleys due to water allocations; elsewhere, larger sowings are expected. It is expected that the total area will equal last year's area, but with substantially different regional distribution. Coastal areas north of the Hunter River and the Macquarie Valley are expected to have the largest increases. Last season water allocations were restricted in the Macquarie Valley area.

November 1981  
New South Wales

Summer  
Oilseeds  
(Continued)

Sunflower

Early sowings progressed satisfactorily. The earliest of these are now flowering and a high proportion are budding. Fields were planted in the south-western irrigated districts. Rutherglen bugs have been a problem and will affect the yield and quality even though they were sprayed.

Summer  
Cereals

Grain Sorghum

Planting was almost complete by the end of November in the lower north-western areas and has been completed for the time being further north. A second planting should occur in the Moree area in mid- to late-December if favorable moisture conditions are present. Cool weather slowed emergence and early growth. Total area is estimated at 175,000 hectares and could go up to 200,000 hectares.

Fiber Crops    Cotton

Growth was restricted in early November by cool weather; high temperatures followed; and growth rates accelerated. About 5 percent of the crop was reseeded. This is the lowest reseeding effort in 3 years. The estimated sown area is 72,300 hectares, almost 9,600 above last season's area. All but 2,500 hectares in the Gwydir and MacIntyre/Barwon Valleys were planted by the end of November.

Area estimates:

MacIntyre/Barwon	6,800 hectares
Gwydir	28,100 hectares
Namoi	25,300 hectares
Macquarie	10,100 hectares
Darling (Bourke)	2,000 hectares

December 1981

Compilation Summary of part of the "New South Wales-  
Report of Production Trends - New South Wales - December 1981"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

**Seasonal  
Conditions**

"December temperatures were somewhat variable. Most places experienced warm to very hot weather in the first half. Temperatures in the second half of the month were mainly milder and below average until warm to hot conditions returned near the end of the period. Early December was mainly dry with odd useful falls of rain in the north-east corner of the state. General rain developed before mid-month, with quite heavy recordings along the coast and Northern Tablelands and a few other northern areas, but easing gradually further inland. Western Districts again fared the worst. Northern parts of the Coast, Tablelands and Slopes received moderate rain the third week, with light to negligible falls elsewhere. The final week saw the southern parts of the Coast and Tablelands experience some very welcome good falls with useful recordings in other coastal and Tableland localities but lighter elsewhere."

**Pastoral  
Conditions**

Summer conditions led to further drying out of the pastures. Reasonable to ample supplies of dry feed are still available except in the far southern parts of the Tablelands, a few northern sections of the Slopes and Plains, and several northern and central far west localities. With the grain harvest almost complete, cereal stubbles are also providing additional feed. Some stock routes are still closed due to the shortage in feed and water supplies.

**Winter  
Cereals**

The winter cereal inland districts were mostly dry for the month of December, though moderate to heavy precipitation occurred in some areas at the end of the month.



December 1981  
New South Wales

Winter  
Cereals  
(Continued)

Wheat

Harvesting proceeded with few disruptions. November's mild weather enabled crops to yield better than expected. Only the traditionally late districts remain to be harvested past the end of December. Most of the wheat harvested was of very good quality.

Barley

Harvesting was finished by mid-December, due to favorable weather at the beginning of December. Ripe crops were more weather damaged in November than usual. This will result in less barley graded for malting standards. Yields were better than anticipated.

Oats

Only the Central and Southern Tablelands and the higher parts of the South-Western Slopes remain to be harvested past December.

Triticale

Production is expected to be close to that forecasted (75,000 tonnes). The best yielding crops were in northern growing districts, as the crop yielded well where spring conditions were not dry.

Winter  
Oilseeds

Linseed

The linseed harvest is complete, with production estimated at 600 tonnes.

Rapeseed

The rapeseed harvest is complete, with production estimated at 4,000 tonnes.

December  
New South Wales

Winter Oilseeds (Continued)	<p><b>Safflower</b></p> <p>Harvest of safflower started in December. Yields were affected by earlier dry conditions and lately by Rutherglen bugs. Yields vary from 0.5 to 1 tonne per hectare.</p>
Summer Oilseeds	<p><b>Soybeans</b></p> <p>Inland sowings were nearly complete by the end of the month. More plantings should be made in the Gwydir Valley due to increased irrigation allocations. The major part of the coastal crop and the eastern area of the Tablelands has not been sown yet.</p> <p><b>Sunflower</b></p> <p>Harvesting of the early sown crops should begin in January. The crop has been affected by hot, dry weather conditions and Rutherglen bugs. Plantings in the northwestern areas, the main sunflower area representing 60-70 percent of the New South Wales crop, are dependent upon good rains in January.</p>
Summer Cereals	<p><b>Grain Sorghum</b></p> <p>Approximately 150,000 hectares were sown, less than that anticipated. Wet weather in November interfered with planting. Unless more rain occurs, no further planting is expected. Early sown crops are progressing well. The Moree area crops are flowering. Yield will be improved if rain is received during the next few weeks.</p>
Fiber Crops	<p><b>Cotton</b></p> <p>The northwestern cotton areas are in the early flowering stage, although in the Macquarie Valley, cotton areas started squaring in late December. Growth rates were improved by the hot weather. The first irrigation has occurred on most crops. Hail damage of some crops occurred in the Gwydir Valley where crops are less advanced than at the same time last season.</p>

January 1982

Compilation Summary of part of the "New South Wales  
Report of Production Trends - New South Wales - January 1982"  
Division of Marketing and Economic Services, Dept. of Agriculture,  
New South Wales, Australia

Seasonal  
Conditions

"January temperatures were mostly average to above, though they tended to be lower at times in the south-west early in the month and in the northern inland in the third week. Late in the month, conditions became very warm to hot with a heatwave in central and southern inland districts until a cool change occurred which moved through all districts toward the close of the month. The Coast and Tablelands recorded light to useful rain in the early part of the month followed the next week by mostly negligible to light falls in the eastern third of the state. Heavy to very heavy falls developed the third week in the north-eastern quarter, the South Coast, and nearby Tablelands with mostly light to moderate recordings elsewhere. The last week also brought heavy rains to the far north-east and southern border districts but mainly light falls elsewhere."

Pastoral  
Conditions

The pastoral situation remains generally satisfactory. Some areas in the upper western and inland northern districts around Walgett, Narrabri, and Condobolin have deteriorated, and the outlook currently is not promising. Water supplies are generally satisfactory except for some south coast, northern inland, and far western areas where the supply is not good. Some drought-affected routes are still closed to traveling stock. Added to the list of drought-declared districts for February were: Condobolin, Narrabri, and Walgett Pastures Protection Districts; the declared part of the Braidwood District was deleted. The total declared for February stands at seven whole and four part districts.

January 1982  
New South Wales

Winters  
Cereals

Wheat

Significant damage to crops in localized areas in various northern parts of the wheat belt occurred due to heavy rain in mid-January. The wheat harvest was completed with over 5,200,000 tonnes delivered to the Australian Wheat Board in New South Wales by the end of the month. The total production of New South Wales wheat could exceed 5,800,000 tonnes for the 1981-82 season. It will be one of the highest on record.

Barley

The New South Wales barley harvest will most likely exceed 700,000 tonnes. Over 370,000 tonnes have been taken at the New South Wales Barley Marketing Board's Pool and Trading Company. Sixty percent was classified malting grade, with 40 percent feed grade. Malting grade is usually higher, but the protein levels were higher this year due to dry spring conditions.

Oats

The New South Wales oat crop has been retained on the farms with only a small quantity delivered to the Oat Marketing Board's Pool.

Winter  
Oilseeds

Safflower

Harvest was almost completed in January. Yields were quite variable from 0.2 to 1.2 tonnes per hectare with an average probably of 0.5 tonne per hectare.

Linseed

Harvest was complete in December; it averaged 0.6 tonne per hectare.

Rapeseed

About 4000 tonnes were produced with the average no more than 0.8 tonnes per hectare.

January 1982  
New South Wales

Summer  
Oilseeds

Sunflower

Early sown crops were maturing under difficult weather conditions; harvest is expected in February. Yield prospects are highly variable. Sowings in the northern inland area were limited due to the absence of general rains. The earlier sowings were variably affected by Rutherglen bugs which can seriously affect yield and quality.

Soybeans

Sowings have been virtually completed. Delays and damage occurred due to rain. Inland crops started flowering in January. The southern inland areas had the earliest inland sowings, prospects there were above average.

Summer  
Cereals

Grain Sorghum

About 150,000 hectares were sown in grain sorghum by December, with an additional 10,000 hectares planted in January after a period of good rainfall in late December and mid-January. In the Moree area, early crops are being harvested; some of the hybrids are yielding 2 to 3 tonnes per hectare. The peak of the harvest is expected late February to early March, since the January rains have delayed harvesting operations. Gunnedah area crops are in the starting to flower development stage.

Cowpeas

About 100 hectares were sown this year for grazing in October. Great interest was shown in cowpeas for grain production after the January rains because good financial returns were being promised; therefore, an additional 200 hectares or so were sown for grain.

January  
New South Wales

Fiber and  
Oils

Cotton

"The New South Wales cotton crop progressed satisfactorily during January. Irrigation proceeded normally in the Macquarie Valley, while the month's rains and free-flow irrigation alleviated/restricted water allocations in north-western cotton growing areas."

February 1982

Compilation Summary of part of the "New South Wales-  
Report of Production Trends - New South Wales - February 1982"  
Division of Marketing and Economic Services, Dept. of Agriculture  
New South Wales, Australia

Seasonal  
Conditions

"Rather warm to hot weather prevailed in the early part of February in New South Wales, followed by a brief cool change. Hot summer conditions returned by mid-month which continued over much of the remainder of the period. Temperatures were above average. Bushfires were reported on several occasions, mainly in southern and near metropolitan districts. Rainfall was light to moderate in the first half and mainly confined to northern and central parts of the Tablelands and Coast. In the second half, various northern and central sections of the Coast, Tablelands, Slopes, and Plains received light to moderate falls on a few occasions. However, dry weather persisted at other times and in other parts of the state until late in the month when all except southern and far western districts recorded light to moderate rain. Totals for all meteorological districts were below average."

Pastoral  
Conditions

Many of the state's agricultural and pastoral districts are slipping back toward drought conditions due to the below average rainfall and, frequently, above average temperatures. Conditions are deteriorating over the state. Stock waters generally are good except in some areas. Some stock routes that are drought affected are closed or are unsatisfactory and are not being heavily used; this is true particularly in the Far West. Added to the list of drought-declared pasture protection districts for March were: Brewarrina and parts of Canonba, Dubbo, Tenterfield and Wilcannia. With the redeclaration of seven whole and four part districts mentioned in the January 1982 report, a total of 16 whole or part districts are declared for March.

February 1982  
New South Wales

Winter  
Cereals

Wheat, Barley, and Oats

Most of the New South Wales wheat crop has been delivered to the Australian Wheat Board. Considerable quantities of oats, and to a lesser extent barley, are still being retained on farms. Production for wheat exceeded 5,800,000 tonnes in New South Wales. Barley production is at least 750,000 tonnes, and oats are over 700,000 tonnes. This coming season's early expectations are for an increased wheat area, with a possible drop in barley plantings and about the same as last year for oats. Some early sowings of oats for grazing purposes have already been made.

Winter  
Oilseeds

The 1982-83 season crop will be greatly influenced by the weather over the next three months and by the estimated profitability and cash flows to be obtained from oilseeds.

Summer  
Oilseeds

Soybeans

Soybean crop prospects have improved except in the North Coast. The North Coast area received recent rainfall which caused substantial erosion in crops, this erosion is detrimental to current and future production. Sowings have probably exceeded 20,000 hectares, of which 9,000 hectares were sown in the coastal rain-grown (dryland) areas. Early sown rain-grown and southwest irrigation crops are starting to be harvested (late February). Yields are not good on the rain-grown, 0.5 tonne per hectare. However, irrigated crops were up to 2.5 tonnes per hectare.

Sunflower

Summer sowings have received unfavorable weather conditions to late February. Approximately 32,000 hectares were sown in sunflowers by late February.

Summer  
Cereals

Grain Sorghum

Harvesting continued at Moree. Many of the Gunnedah area sorghum crops have failed due to lack of rain in January, but the



February 1982  
New South Wales

Summer  
Cereals  
(Continued)

Irrigated crops in the north are expected to average about 6 tonnes per hectare. Crops in the Coleambally irrigation area could average 7 tonnes per hectare. An estimate of 154,000 hectares has been sown. This area could produce a total of 310,000 tonnes.

Cowpeas

A sown area of 3,530 hectares produced 1,900 tonnes. Coastal area crops had a problem caused by grass weeds.

Fiber and  
Oils

Cotton

Irrigated crops are progressing well, and good yields are expected because of general good weather conditions. Rains in February benefited growers, substituting for the final irrigation of the season. Where growers had already irrigated, the rain was detrimental. Estimates are for an average yield of five bales per hectare or better depending on future weather.

## 5.2 WESTERN AUSTRALIA AGRICULTURE DATA

### 5.2.1 VARIETAL CONTROL FOR 1981-82 SEASON (ref. 12).

Australia controls the wheat varieties grown in order to improve the grain quality of each state's wheat crop. The aim of varietal control is to maximize the quality of premium grades in demand overseas and to maintain uniform delivery grades.

Wheat growers in Australia are advised by the Department of Agriculture to consult the receival point list to determine the silo group in which their receival point was placed, consult the varietal discount list to determine the level of discount on different varieties, and consult Farmnote 107/80 for varieties recommended for their area. (The Farmnote 107/80 containing the recommended varieties of wheat for the 1981-82 season was not available for inclusion in this report.) For the 1981-82 season, the wheat varietal control list was published in Farmnote No. 117/80 (ref. 12). The cooperative bulk handling receival points for the 1981-82 season are in Farmnote No. 117/80; they are listed by groups A through D as follows:

Group A: Australian Standard White (ASW) and Australian hard (A. hard)

Group B: High protein receival point which receives only ASW wheat

Group C: Low protein receival point which receives only ASW wheat

Group D: ASW and Australian soft (A. soft) wheat

Growers consult the receival point to determine the silo group in which their receival point is placed. Based on this list, the closest (geographical) receival point for each ground data segment appeared to be as follows:

<u>Segment no.</u>	<u>Receival point (Group A, B, C, or D)</u>	<u>Segment no.</u>	<u>Receival point (Group A, B, C, or D)</u>
4408	Yarding (B) Bruce Rock (B)	4422	Dangin (C) Quairading (C)
4410	Yorkrakine (B) Cunderdin (B)	4424	Beacon (A)
4412	Kodj Kodjin (B) Doodlakine (A) Kellerberrin (B)	4425	Coorow (B), quite some distance from the sample segment
4416	Hines Hill (B)	4427	Pithara (B) Kalannie (A)
4419	Beacon Hill (B)		

The grower consults the varietal discount list to determine the discount level on different varieties. This discount list also appears in the same Farmnote publication (No. 117/80). Examples follow:

- a. In segment 4408 there were several fields of the wheat variety Heron:

<u>Wheat variety</u>	<u>Silo groups</u>			
	A	B	C	D
Heron	\$3	\$3	\$3	\$3

This variety (Heron) will be received at each of the silo groupings into the ASW class but will be docked \$3 per tonne.

- b. In segment 4422 wheat varieties Gamenya [Australian Standard White (ASW)] and Halberd (also ASW) were grown. They would be treated in the following manner at the receival points:

<u>Wheat variety</u>	<u>Silo groups</u>			
	A	B	C	D
Gamenya	A. hard/ASW	ASW	ASW	ASW
Halberd	ASW	ASW	ASW	ASW

Note: ASW will be subject to discount if proportion in the zone reached unacceptable level which affects salability (ref. 12).

### 5.2.2 CROP CALENDAR

Figure 5-3 is the historical normal crop calendar for the state of Western Australia.

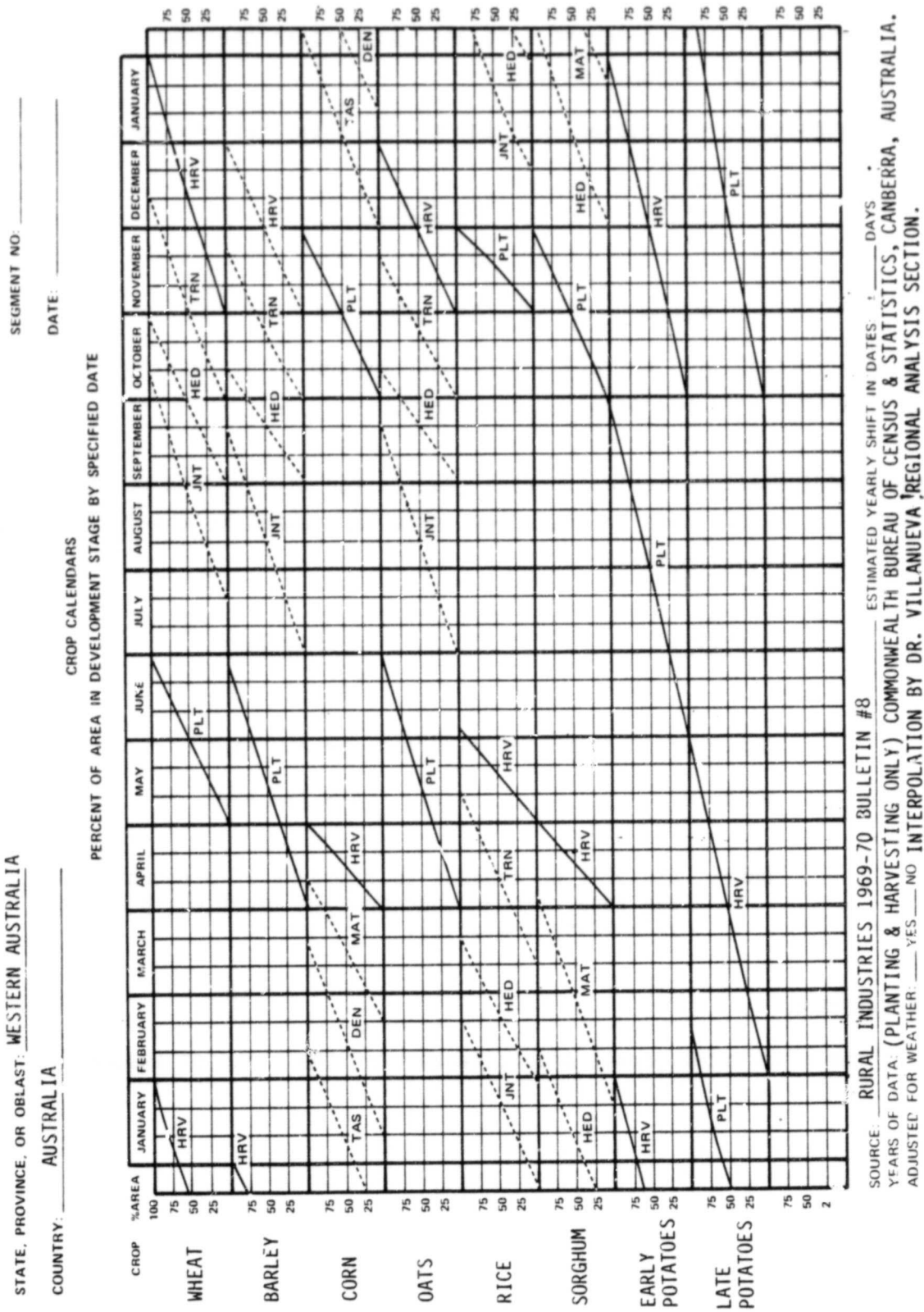


Figure 5-3.- Western Australia historical normal crop calendar.

\*COTTON MAY BE HARVESTED TWICE\* FROM A SINGLE PLANTING

Figure 5-3.-- Concluded.

## **6. REPRESENTATIVE PHOTOGRAPHS OF THE AUSTRALIAN AGRICULTURAL SCENE IN THE GROUND DATA COLLECTION AREA**

This section consists of representative photographs of the Australian agricultural scene in the ground data collection area. Presentation format is used to convey the following information.

- a. Unique cropping practices
- b. Wheat varieties
- c. Differences in stand density
- d. Barley - growth stage comparison
- e. Barley - New South Wales
- f. Oats
- g. Lupins - New South Wales
- h. Lupins - Western Australia
- i. Other winter crops
- j. Summer crops
- k. Western Australia - nonagricultural fields
- l. Examples of differing rates of maturity in a field - Western Australia

## UNIQUE CROPPING PRACTICES

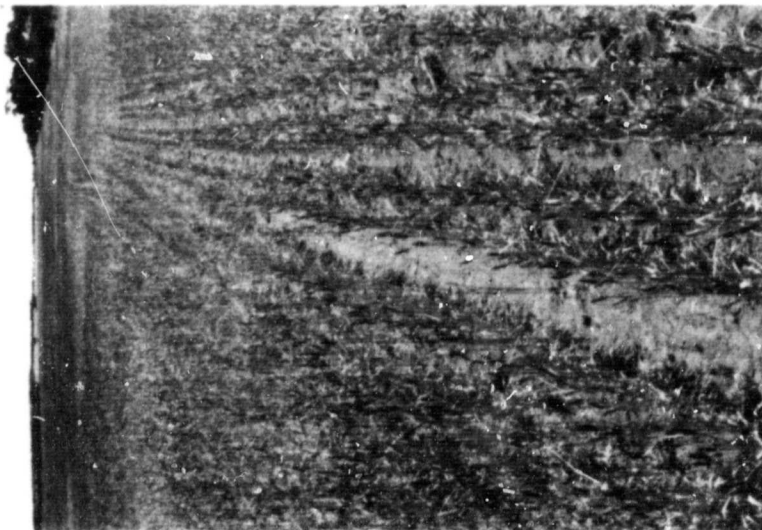
ORIGINAL PAGE  
BLACK AND WHITE PHOTOGRAPH



SPRAY SEEDING (NO CULTIVATION  
HERBICIDE USED FOR WEED KILL)

SEGMENT 4425, WESTERN AUSTRALIA

- CROP: WHEAT (FIELD 7A)
- VARIETY: HALBERD
- SOWN: JULY 5, 1981
- SEEDING RATE: 45 kg/ha
- COMMENT: NOVEMBER 4, 1981. SOFT DOUGH STAGE. SPRAY SEEDED, USING AN HERBICIDE IN PLACE OF CULTIVATION FOR WEEDS



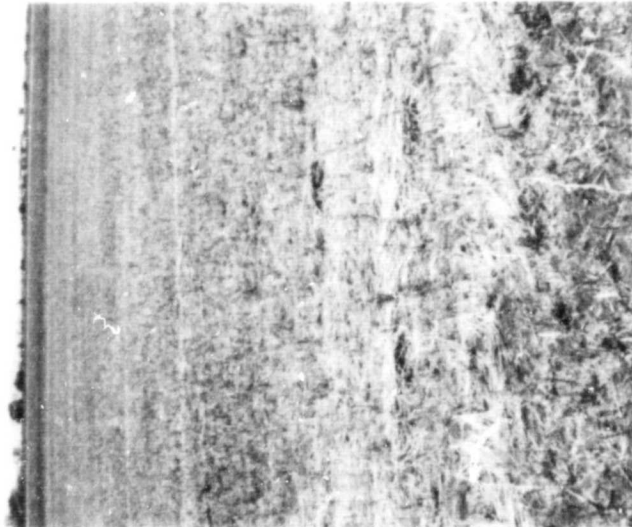
DIRECT DRILLED (NO TILLAGE)

SEGMENT 4423, WESTERN AUSTRALIA

- CROP: WHEAT (FIELD 8)
- VARIETY: HALBERD
- SOWN: JUNE 3, 1981
- SEEDING RATE: 30 kg/ha
- COMMENT: OCTOBER 28-29, 1981  
A THIN STAND 2 TO 3 WEEKS FROM HARVEST. NORTHERN PART OF FIELD DRY SEEDED

ORIGINAL PAGE  
BLACK AND WHITE PHOTOGRAPH

## UNIQUE CROPPING PRACTICES (CONTINUED)

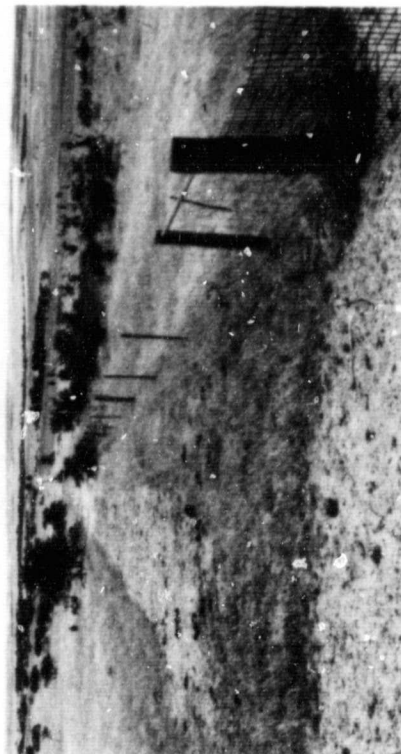


- FIELD: 29A, WHEAT
- VARIETY: KITE
- SOWN: JUNE 14, 1981
- SEEDING RATE: 28 kg/ha
- ROW SPACING: 18 cm
- COMMENT: NOVEMBER 11, 1981. OUTSIDE OF THE PADDOCK CUT FOR HAY. ONLY THE SMALL CENTER PORTION WILL BE HARVESTED.

DUAL PURPOSE HARVESTING  
SEGMENT 4095, NEW SOUTH WALES

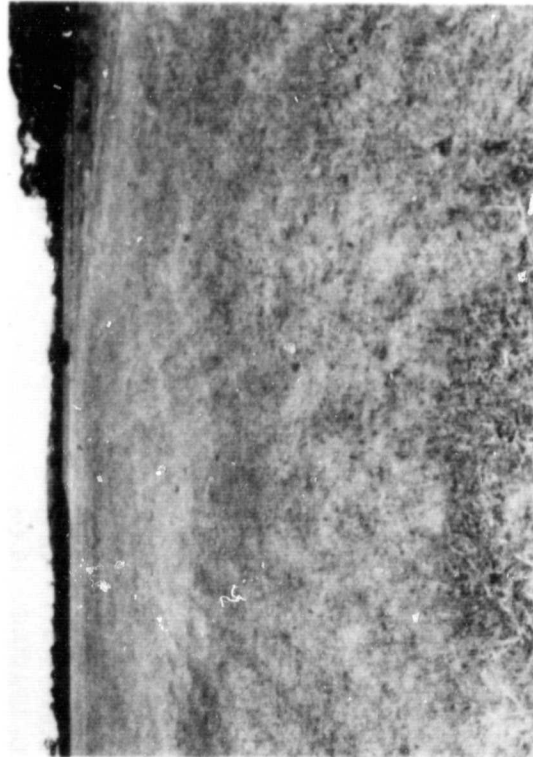


## UNIQUE CROPPING PRACTICES (CONTINUED)



GRAZED/NONGRAZED PASTURE  
SEGMENT 4425, WESTERN AUSTRALIA

- FIELD: PASTURE FIELDS
- COMMENT: HEAVILY GRAZED TO THE LEFT OF THE FENCE, NOT GRAZED TO THE RIGHT OF THE FENCE, IN THE BACKGROUND IS OAT FIELD 15. NOTE THE TREES WITHIN THE FIELD FOR STOCK SHELTER.



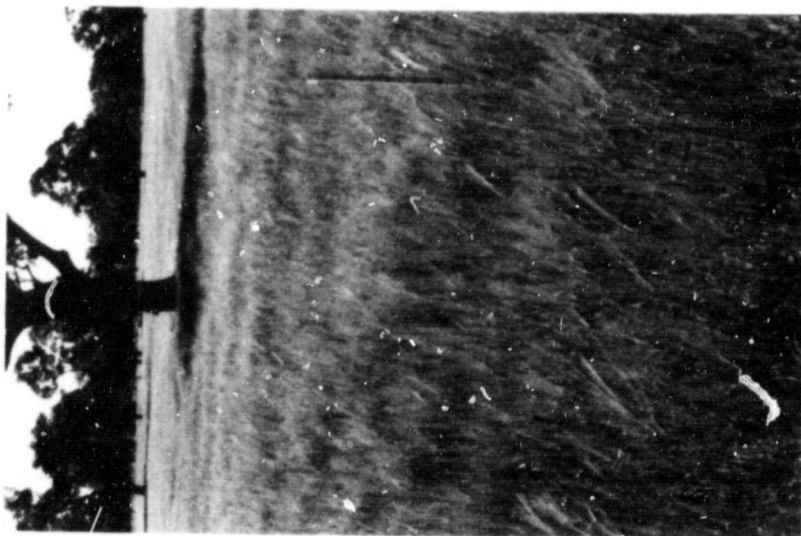
GRAZING OF STUBBLE  
SEGMENT 4423, WESTERN AUSTRALIA

- FIELD: 19 (STUBBLE)
- COMMENT: OCTOBER 30, 1981. CROPPED IN BARLEY LAST YEAR, SOME STRAW RESIDUE ON THE GROUND. IT HAS BEEN CONTINUOUSLY GRAZED SINCE LAST YEAR.

ORIGINAL PAGE  
BLACK AND WHITE PHOTOGRAPH

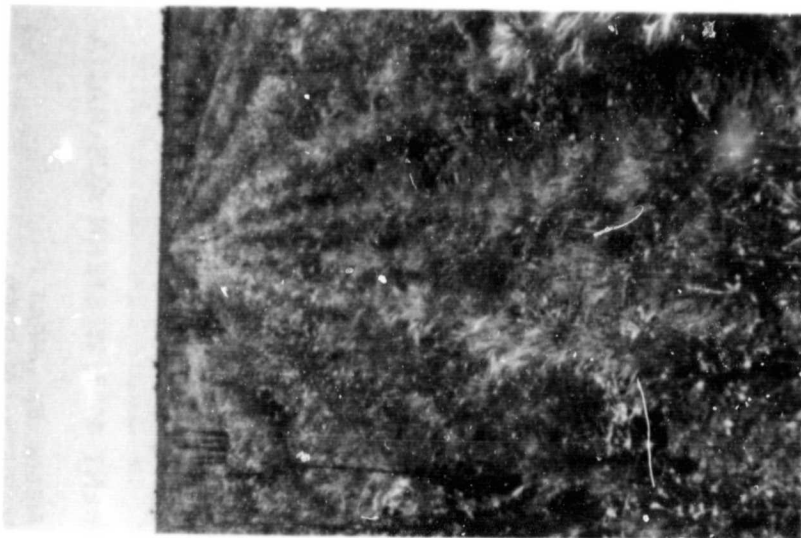
# UNIQUE CROPPING PRACTICES (CONCLUDED)

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BLACK AND WHITE PHOTOGRAPH



CROPPING ADJACENT TO TREES  
SEGMENT 4033, NEW SOUTH WALES

- CROP: WHEAT (FIELD 53)
- COMMENT: CROP PLANTED RIGHT UP TO TREES WITHIN THE FIELD

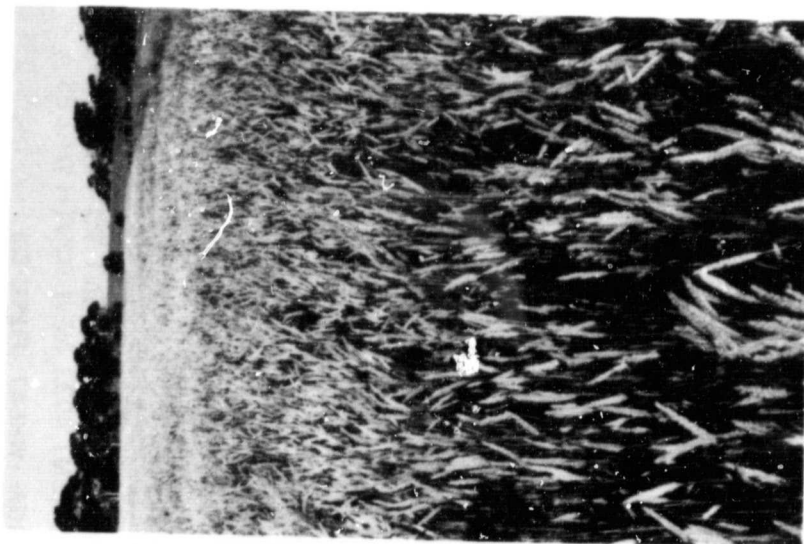


SOWN INTO STUBBLE  
SEGMENT 4055, NEW SOUTH WALES

- CROP: WHEAT (FIELD 18)
- VARIETY: TIMGALEN
- SOWN: JULY 31, 1981
- SEEDING RATE: 24 kg/ha
- ROW SPACING: 18 cm
- COMMENT: NOVEMBER 11, 1981
- SOWN DIRECTLY INTO COTTON STUBBLE

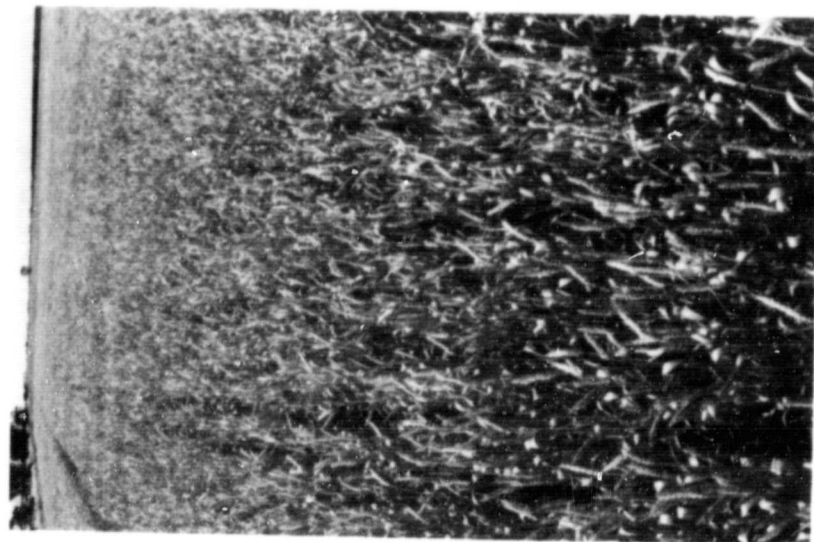
# WHEAT VARIETIES

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BLACK AND WHITE PHOTOGRAPH



SEGMENT 4425, WESTERN AUSTRALIA

- FIELD: 7, WHEAT
- VARIETY: HALBERD
- SOWN: JULY 5, 1981
- SEEDING RATE: 45 kg/ha
- ROW SPACING: 18 cm

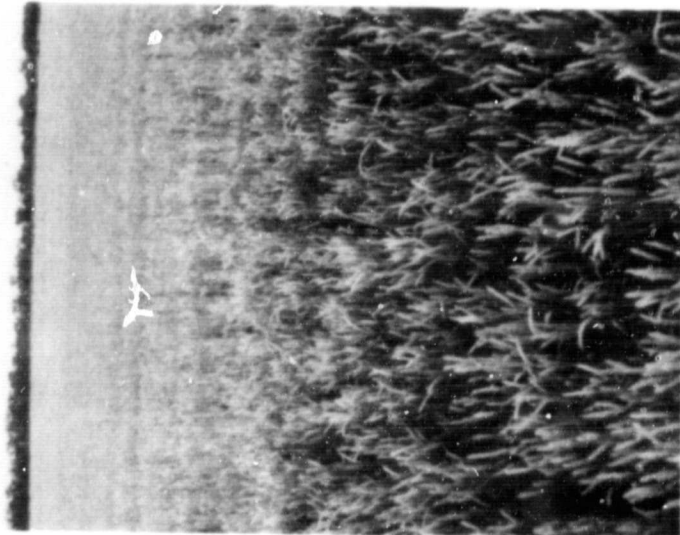


SEGMENT 4427, WESTERN AUSTRALIA

- FIELD: 57, WHEAT
- VARIETY: MADDEN
- SOWN: JUNE 4, 1981
- SEEDING RATE: 33 kg/ha
- ROW SPACING: 18 cm
- COMMENT: NOVEMBER 4, 1981,  
HARD DOUGH STAGE

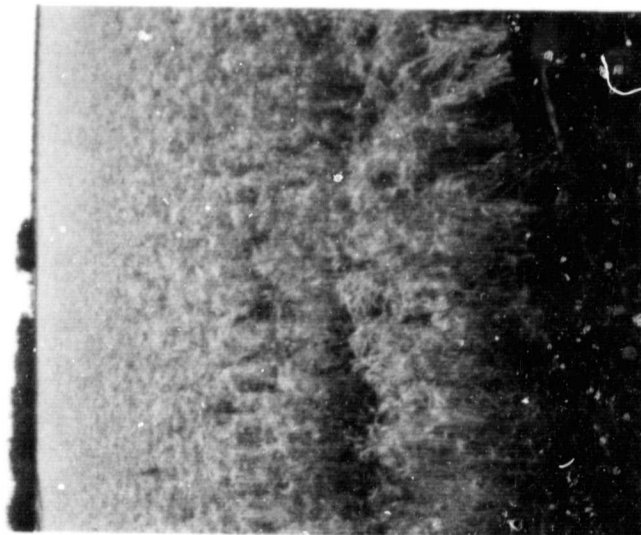
# WHEAT VARIETIES (CONTINUED)

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SEGMENT 4095, NEW SOUTH WALES

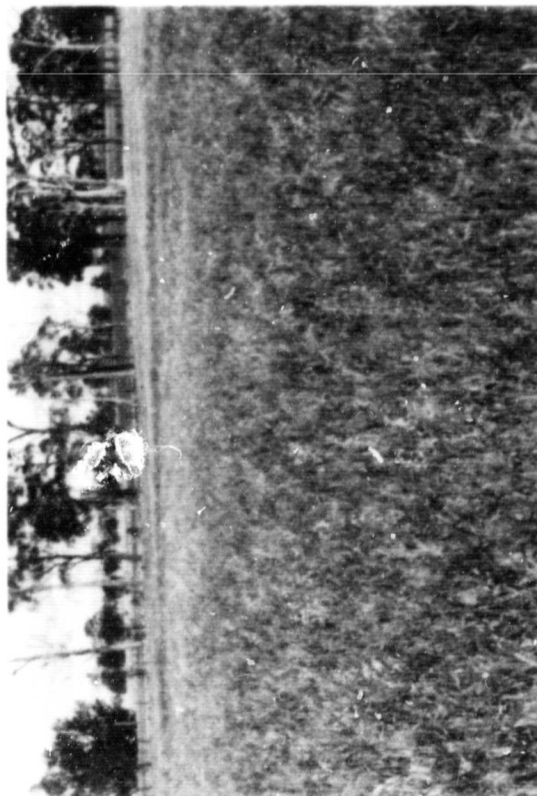
- FIELD: 90, IRRIGATED WHEAT
- VARIETY: KITE
- SOWN: JULY 14, 1981
- SEEDING RATE: BROADCAST  
AT 60 kg/ha
- COMMENT: NOVEMBER 18, 1981



SEGMENT 4095, NEW SOUTH WALES

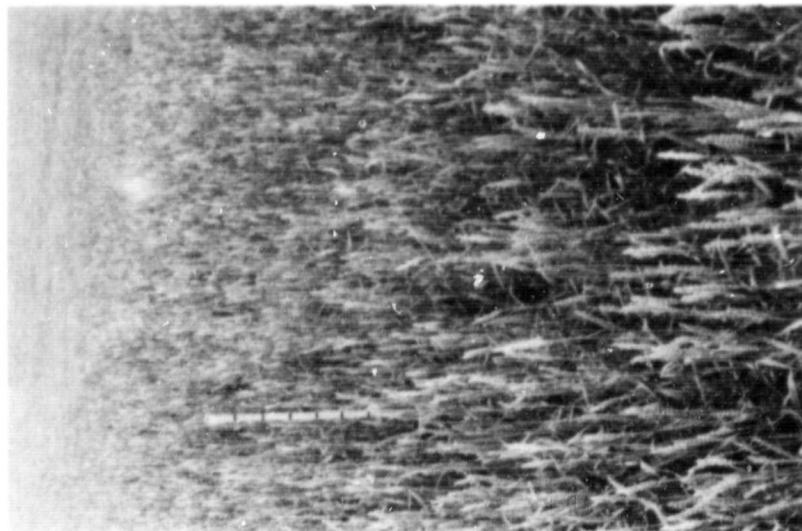
- FIELD: 47, WHEAT
- VARIETY: TIMGALEN
- SOWN: JULY 15, 1981
- SEEDING RATE: 15 Kg/ha
- ROW SPACING: 18 cm
- COMMENT: NOVEMBER 18, 1981

# WHEAT VARIETIES (CONTINUED)



SEGMENT 4037, NEW SOUTH WALES

- FIELD: 13, WHEAT
- VARIETY: SHORTIM
- SOWN: JULY 9, 1981
- SEEDING RATE: 33 kg/ha
- ROW SPACING: 28 cm
- COMMENT: PHOTOGRAPHED NOVEMBER 2, 1981



SEGMENT 4033, NEW SOUTH WALES

- FIELD: 19, WHEAT
- VARIETY: EAGLE
- SOWN: JULY 1, 1981
- SEEDING RATE: 40 kg/ha
- ROW SPACING: 17 cm
- COMMENT: PHOTOGRAPHED NOVEMBER 3, 1981

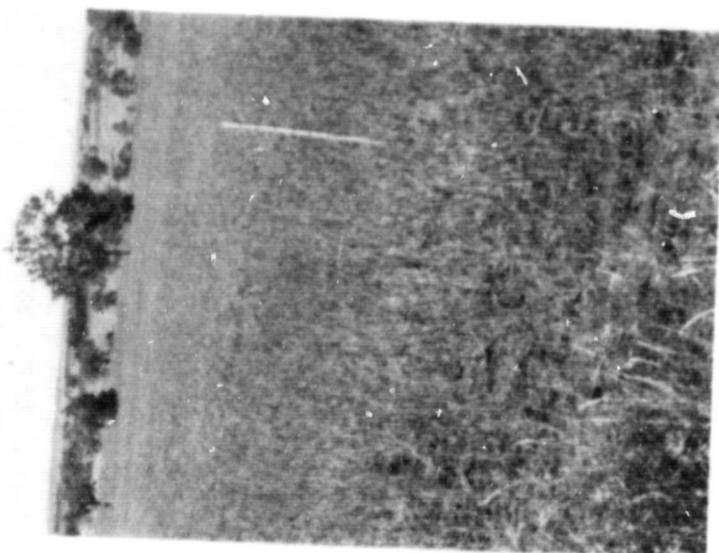
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# WHEAT VARIETIES (CONCLUDED)



SEGMENT 4013, NEW SOUTH WALES

- FIELD: 49, WHEAT
- VARIETY: KITE
- SOWN: JUNE 26, 1981
- SEEDING RATE: 40 kg/ha
- ROW SPACING: 6 cm
- COMMENT: PHOTOGRAPHED OCTOBER 28, 1981.



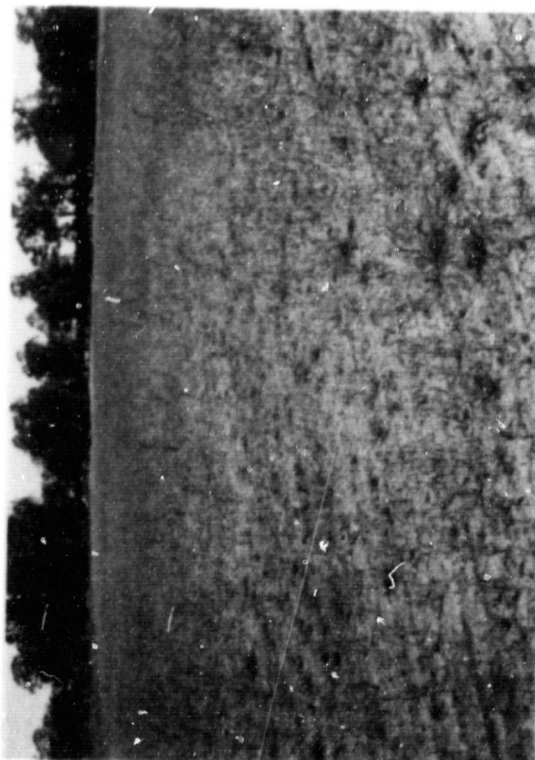
SEGMENT 4033, NEW SOUTH WALES

- FIELD: 16, WHEAT
- VARIETY: COOK
- SOWN: JUNE 14, 1981
- SEEDING RATE: 38 kg/ha
- ROW SPACING: 17 cm
- COMMENT: PHOTOGRAPHED OCTOBER 27, 1981.

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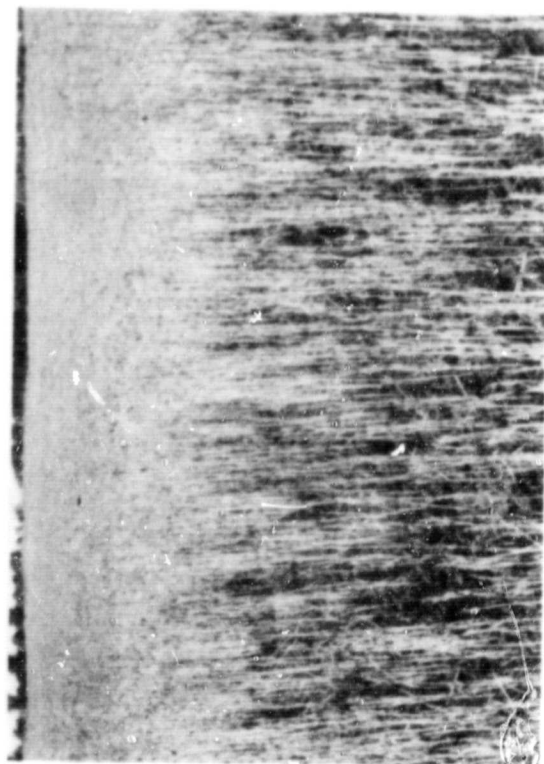


# DIFFERENCES IN STAND DENSITY



SEGMENT 4037, NEW SOUTH WALES

- FIELD: 31, WHEAT
- VARIETY: EAGLE
- SOWN: JULY 14, 1981
- SEEDING RATE: 43 kg/ha
- ROW SPACING: 16 cm
- COMMENT: CROP EMERGED AUGUST 3, 1981. NO FERTILIZER USED, SPARSE CROP AND WEEDY. PHOTOGRAPHED NOVEMBER 6, 1981.



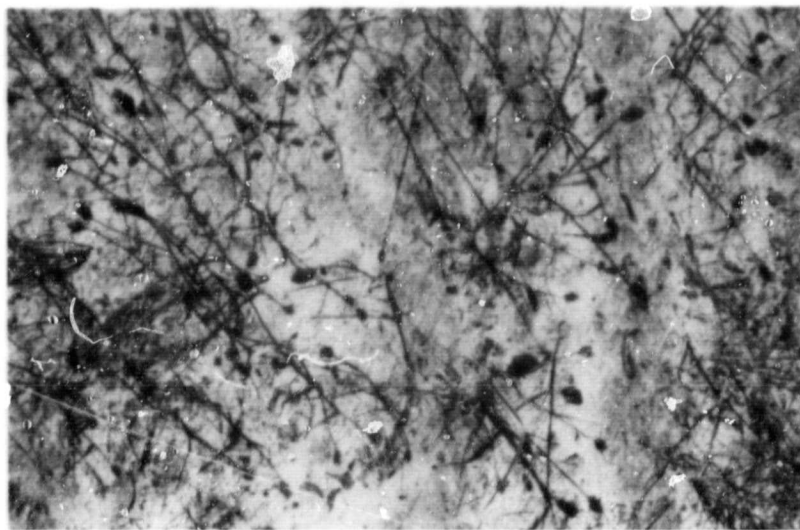
SEGMENT 4037, NEW SOUTH WALES

- FIELD: 44, WHEAT
- VARIETY: WINDEBRI
- SOWN: APRIL 9, 1981
- SEEDING RATE: 38 kg/ha
- ROW SPACING: 20 cm
- COMMENT: FERTILIZER USED. PHOTOGRAPHED NOVEMBER 6, 1981.

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# DIFFERENCES IN STAND DENSITY (CONCLUDED)

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SEGMENT 4425, WESTERN AUSTRALIA

VERTICAL VIEW OF FIELD 8, WHEAT.  
NOTICE THE DRY PATCHES OF SUB-  
CLOVER ON THE GROUND. IT WAS  
UNDERSOWN WITH 3 kg/ha OF SUB-  
CLOVER. PHOTOGRAPHED  
NOVEMBER 4, 1981.



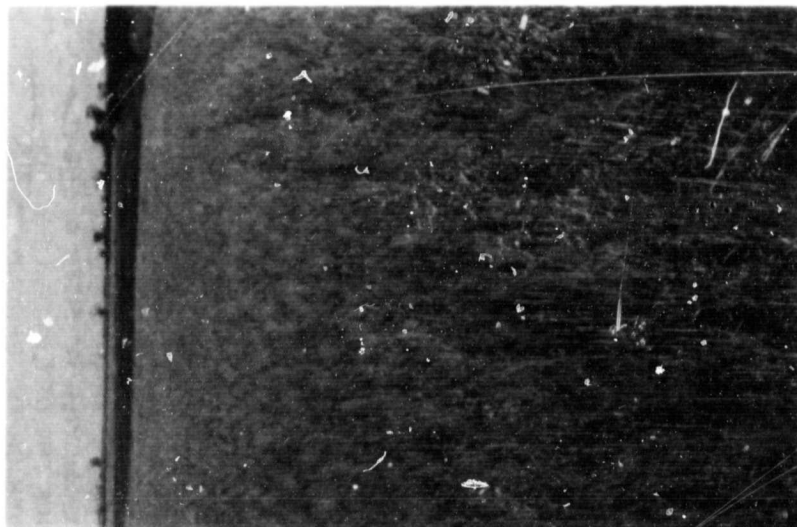
SEGMENT 4425, WESTERN AUSTRALIA

- FIELD: 8, WHEAT
- VARIETY: HALBERD
- SOWN: JUNE 7, 1981
- SEEDING RATE: 44 kg/ha
- ROW SPACING: 18 cm
- COMMENT: VERY THIN STAND. SMALL  
EARHEADS, SANDY SOILS, NEWLY  
CULTIVATED LAND. PHOTOGRAPHED  
NOVEMBER 4, 1981.



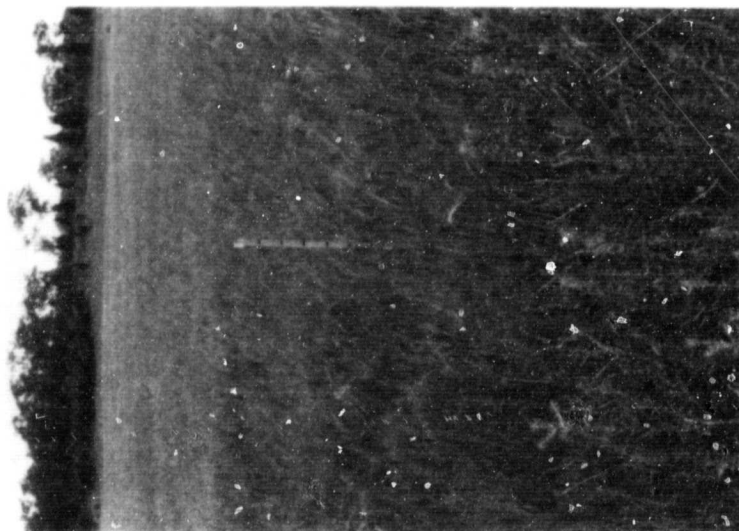
# BARLEY—GROWTH STAGE COMPARISON

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SEGMENT 4416, WESTERN AUSTRALIA

- FIELD: 59
- SOWN: JUNE 18, 1981, CONTOURED
- SEEDING RATE: 35 kg/ha
- ROW WIDTH: 18 cm
- COMMENT: OCTOBER 29, 1981  
WILD OAT WEED INFESTATION,  
SALT ENCROACHMENT IN BACKGROUND

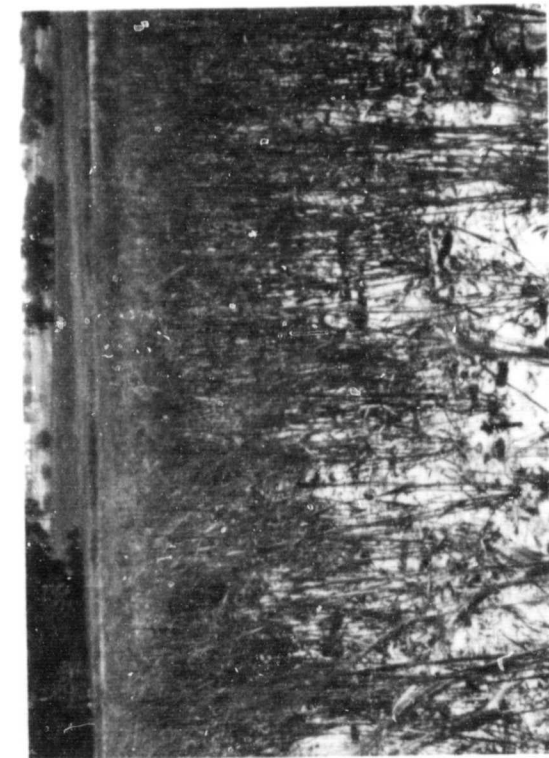


SEGMENT 4033, NEW SOUTH WALES

- FIELD: 24
- VARIETY: LARA
- SOWN: FEBRUARY 25, 1981
- SEEDING RATE: 50 kg/ha
- ROW SPACING: 17 cm
- COMMENT DATE: NOVEMBER 3, 1981

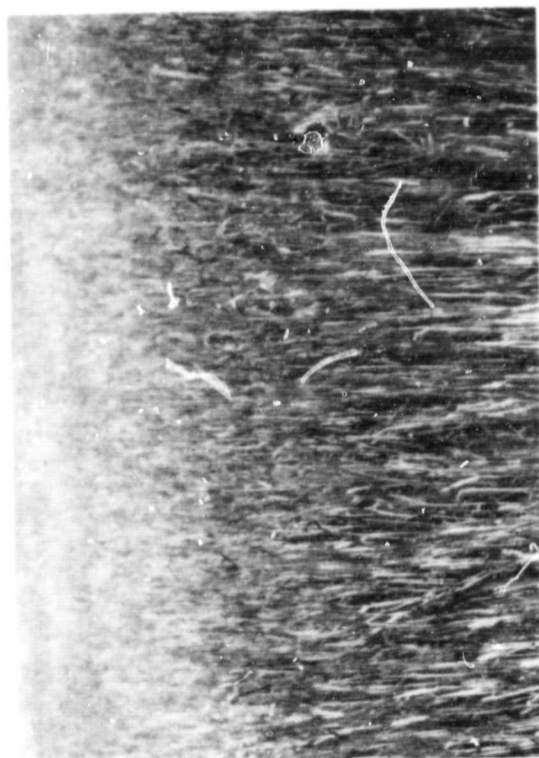
22

# BARLEY—NEW SOUTH WALES



SEGMENT 4013, NEW SOUTH WALES

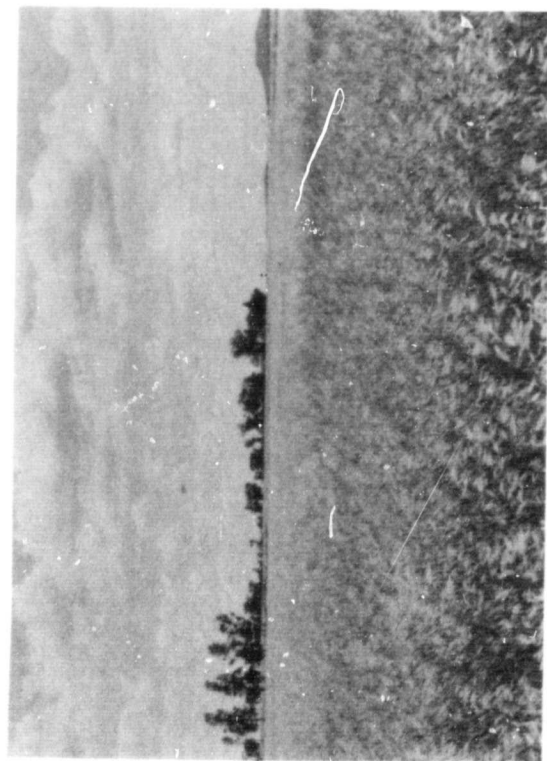
- FIELD: 54
- VARIETY: CLIPPER
- SOWN: JULY 7, 1981
- SEEDING RATE: 40 kg/ha
- ROW SPACING: 6 cm
- COMMENT: OCTOBER 28, 1981



SEGMENT 4013, NEW SOUTH WALES

- FIELD: 83
- VARIETY: LARA
- SOWN: JULY 14, 1981
- SEEDING RATE: 28 kg/ha
- ROW SPACING: 7 cm
- COMMENT: OCTOBER 29, 1981
- EARLY SOWN, MODERATE WILD OAT INFESTATION

# BARLEY—NEW SOUTH WALES (CONCLUDED)



SEGMENT 4015, NEW SOUTH WALES

- FIELD: 11
- SOWN: JUNE 20, 1981
- SEEDING RATE: 44 kg/ha
- ROW SPACING: 27 cm
- COMMENT: OCTOBER 30, 1981



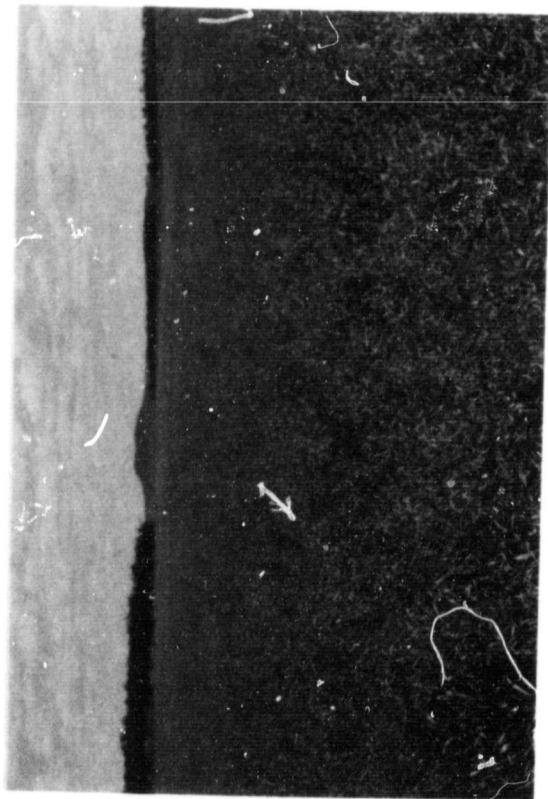
SEGMENT 4015, NEW SOUTH WALES

- FIELD: 7
- VARIETY: CLIPPER
- SOWN: APRIL 30, 1981
- SEEDING RATE: 40 kg/ha
- ROW SPACING: 18 cm
- COMMENT: OCTOBER 23, 1981  
GRAZED UNTIL MID-NOVEMBER

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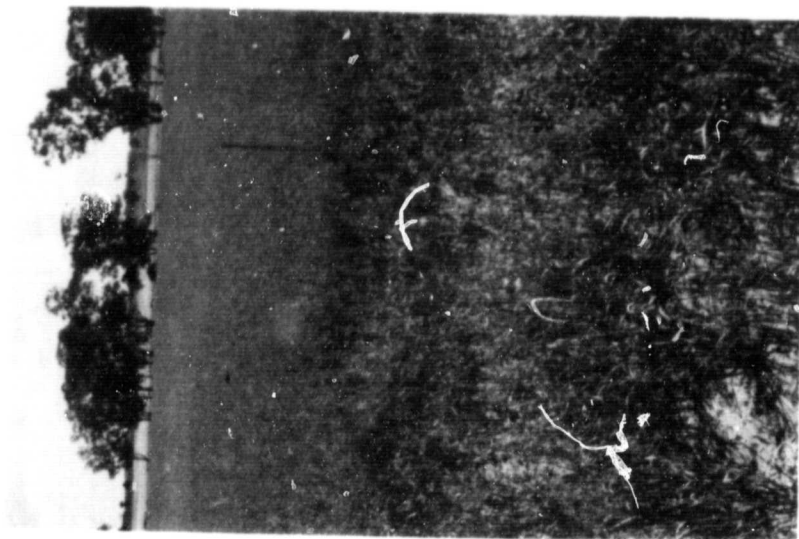
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OATS



SEGMENT 4J15, NEW SOUTH WALES

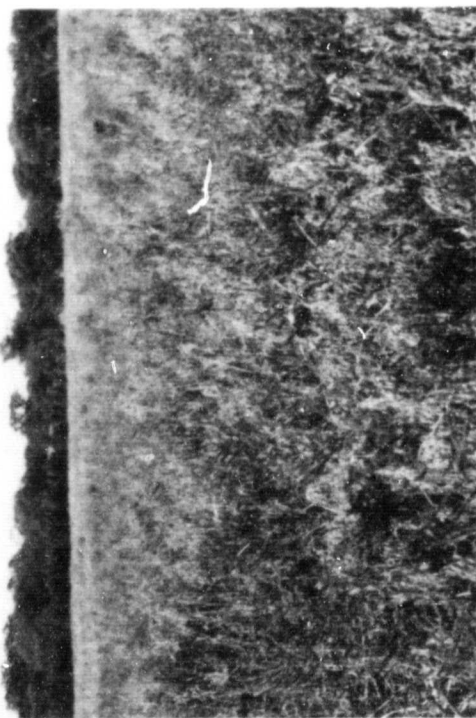
- FIELD: 5
- VARIETY: CASSIA
- SOWN: APRIL 30, 1981
- SEEDING RATE: 40 kg/ha
- ROW SPACING: 18 cm
- COMMENT: GRAZED FROM SEPTEMBER TO MID-NOVEMBER, WILL NOT BE HARVESTED



SEGMENT 4033, NEW SOUTH WALES

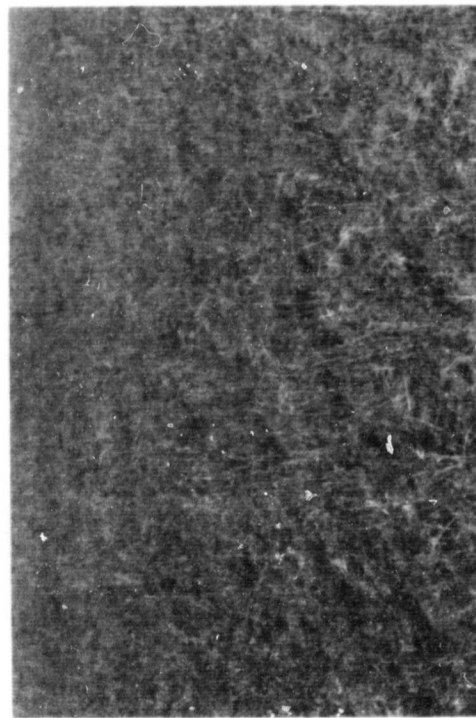
- FIELD: 10
- SOWN: FEBRUARY, RESOWN JUNE 12, 1981
- SEED RATE: 60 kg/ha
- COMMENT: OCTOBER 27, 1981 GRAZED ON TWO OCCASIONS, THEN RESOWN IN JUNE

# OATS (CONCLUDED)



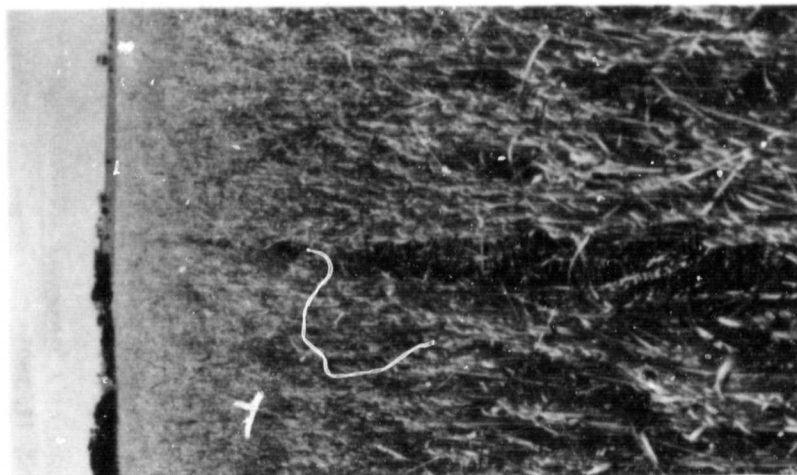
SEGMENT 4037, NEW SOUTH WALES

- FIELD: 89
- SOWN: FEBRUARY 28, 1981
- COMMENT: VERY BAD PATTERSON'S CURSE WEED INFESTATION



SEGMENT 4037, NEW SOUTH WALES

- FIELD: 103
- VARIETY: COOBA
- SOWN: MAY 8, 1981
- SEEDING RATE: 45 kg/ha
- ROW SPACING: 20 cm
- COMMENT: GRAZED



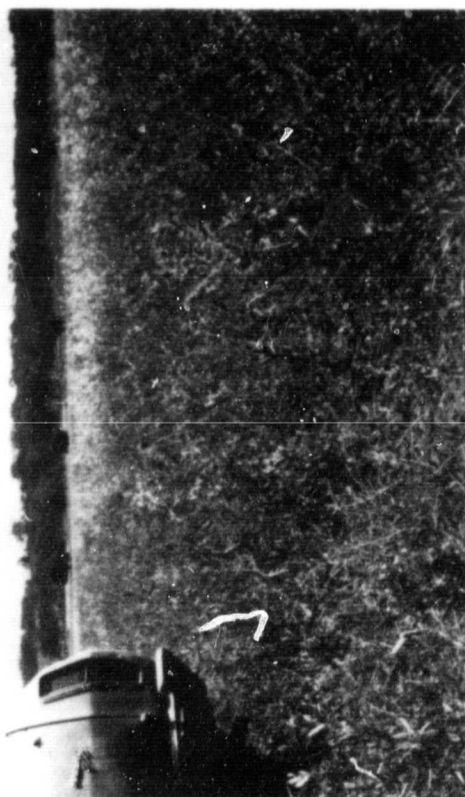
SEGMENT 4427,  
WESTERN AUSTRALIA

- FIELD: 21
- VARIETY: SWAN
- SOWN: MAY 26, 1981
- COMMENT: POOR GERMINATION AND GROWTH, BAD WEED INFESTATION, SOWN FOR GRAIN

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## LUPINS - NEW SOUTH WALES



### SEGMENT 4013, NEW SOUTH WALES

- FIELD: 56
- VARIETY: UNICROP
- SOWN: JUNE 18, 1981
- SOWING RATE: 37 kg/ha
- ROW SPACING: 6 cm
- COMMENT: OCTOBER 28, 1981. SEVERE  
WILD OAT INFESTATION



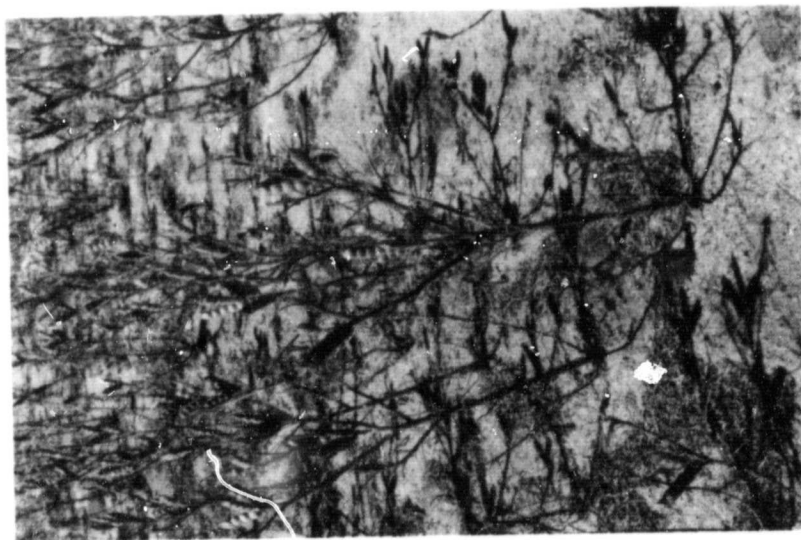
# LUPINS - WESTERN AUSTRALIA

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SEGMENT 4425, WESTERN AUSTRALIA

- FIELD: 14
- SOWN: SELF-SOWN VOLUNTARY CROP
- COMMENT: NOVEMBER 4, 1981.
- FERTILIZED, SOME SUBCOVER, SOME RYEGRASS, HAS BEEN GRAZED

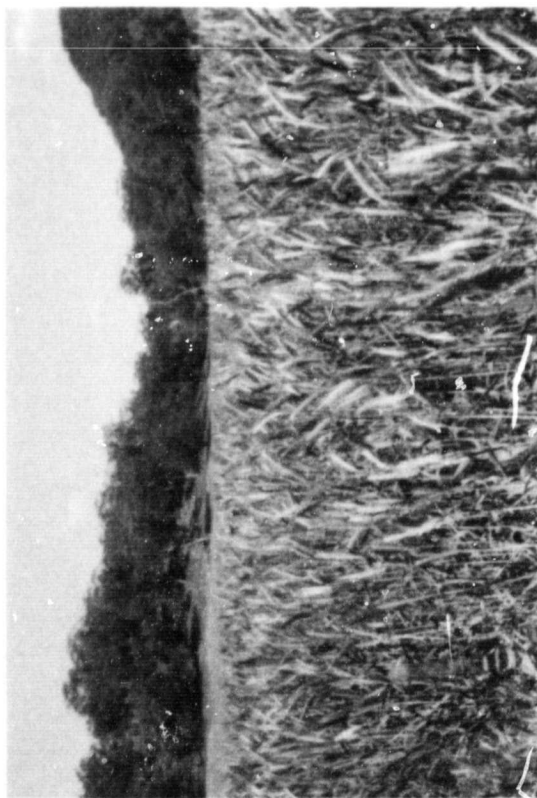


SEGMENT 4416, WESTERN AUSTRALIA

- FIELD: NEAR SEGMENT
- COMMENT: (END OF OCTOBER)
- SPARSE GROUND COVER: FROM THE ROAD, IT LOOKED SIMILAR TO WHEAT

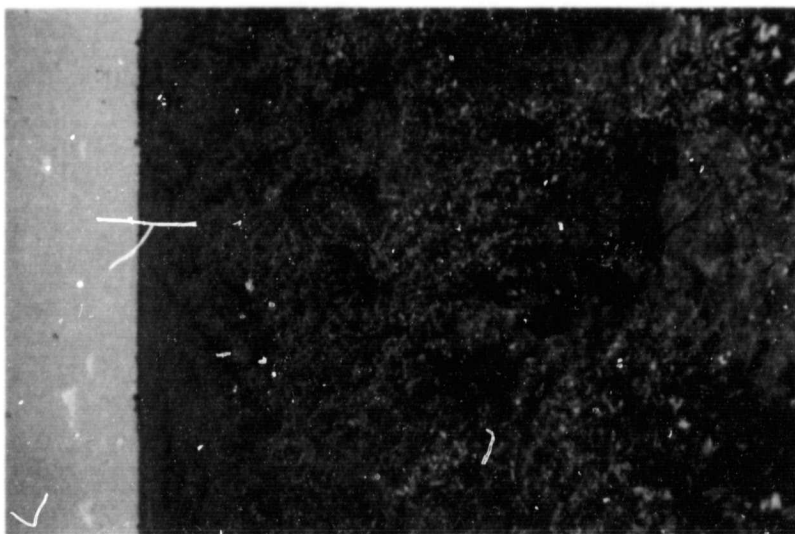
# OTHER WINTER CROPS

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SEGMENT 4013, NEW SOUTH WALES

- FIELD: 48
- CROP: TRITICALE
- VARIETY: COORONG
- SOWN: JULY 14, 1981
- SEEDING RATE: 20 kg/ha
- ROW SPACING: 6 cm



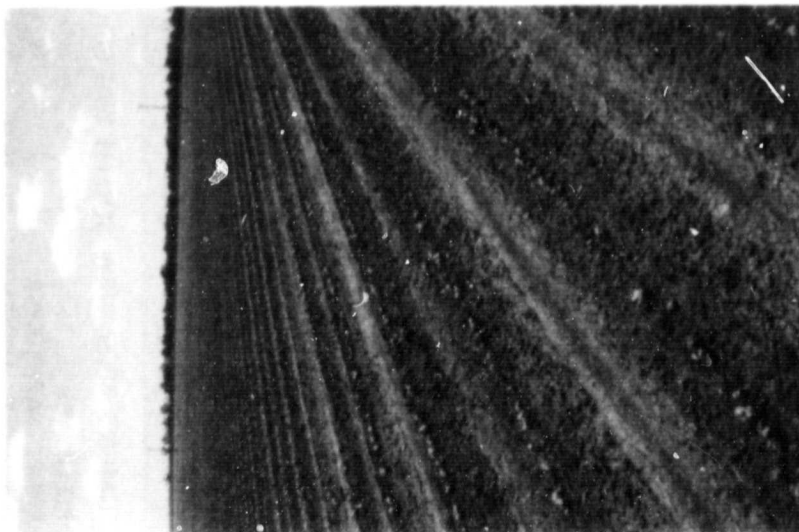
SEGMENT 4095, NEW SOUTH WALES

- FIELD: 89
- CROP: SAFFLOWER
- COMMENT: NOVEMBER 11, 1981



# SUMMER CROPS

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SEGMENT 4095, NEW SOUTH WALES

- FIELD: 28
- CROP: COTTON
- COMMENT: NOVEMBER 11, 1981



SEGMENT 4015, NEW SOUTH WALES

- FIELD: NORTHWEST OF FIELD 20
- CROP: SORGHUM, JUST EMERGED
- COMMENT: OCTOBER 30, 1981

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SUMMER CROPS (CONTINUED)



SEGMENT 4015, NEW SOUTH WALES

- FIELD: NORTH OF FIELD 65
- COMMENT: NOVEMBER 6, 1981
- ON THE LEFT, A TRIAL STRIP
- PLOT OF SUNFLOWERS. ON THE
- RIGHT, A NO-TILL SORGHUM
- TRIAL PLOT SOWN IN STANDING
- STUBBLE ON OCTOBER 20, 1981,
- AND EMERGED ON NOVEMBER 4, 1981

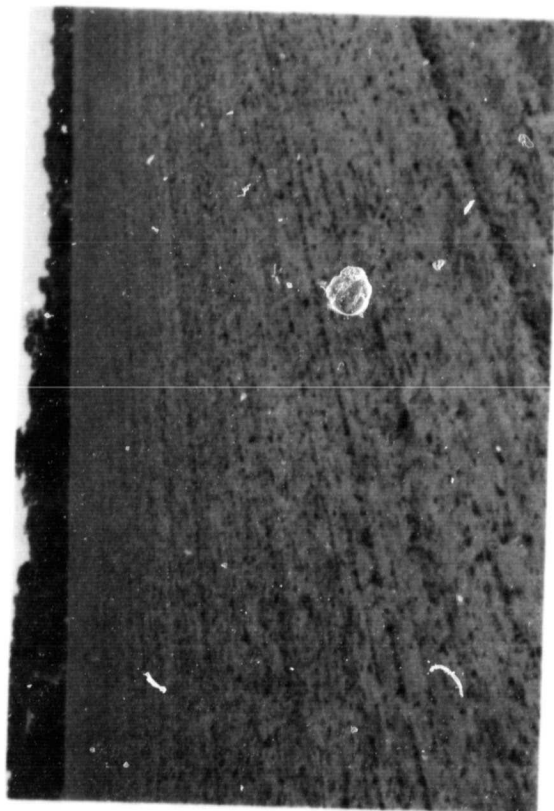


SEGMENT 4015, NEW SOUTH WALES

- FIELD: CLOSE TO FIELD 61
- CROP: SUNFLOWERS
- COMMENT: NOVEMBER 6, 1981

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SUMMER CROPS (CONCLUDED)  
COWPEAS—NEW SOUTH WALES

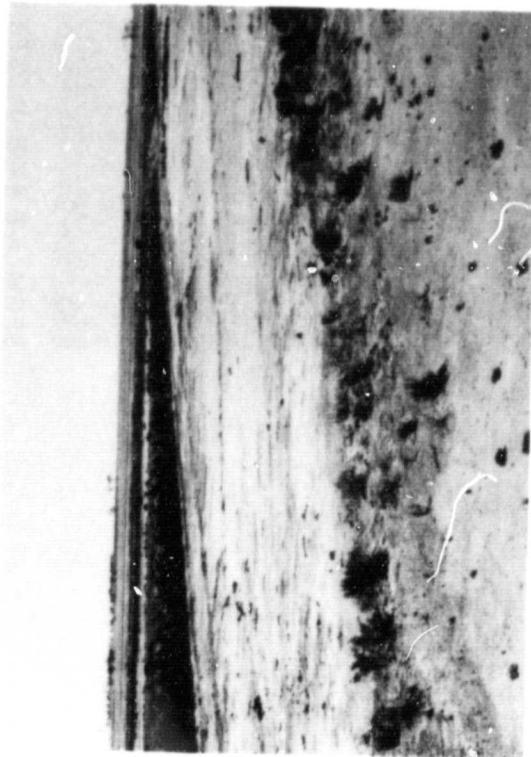


SEGMENT 4037, NEW SOUTH WALES

- SOWN: NOVEMBER 3, 1981
- VARIETY: POONA
- SEEDING RATE: 12 kg/ha
- ROW WIDTH: 20 cm
- COMMENT: EMERGED ON DATE  
OF SURVEY, NOVEMBER 10, 1981

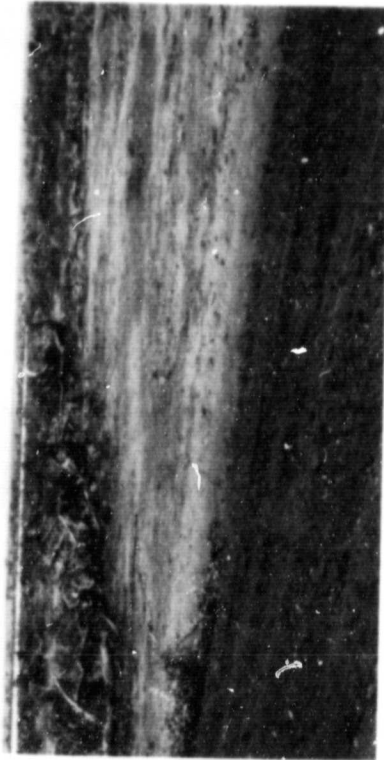
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WESTERN AUSTRALIA—NONAGRICULTURAL FIELDS



SEGMENT 4416, WESTERN AUSTRALIA

SALT RANKS WITH WINTER WHEAT  
FIELD NO. 2 IN THE BACKGROUND

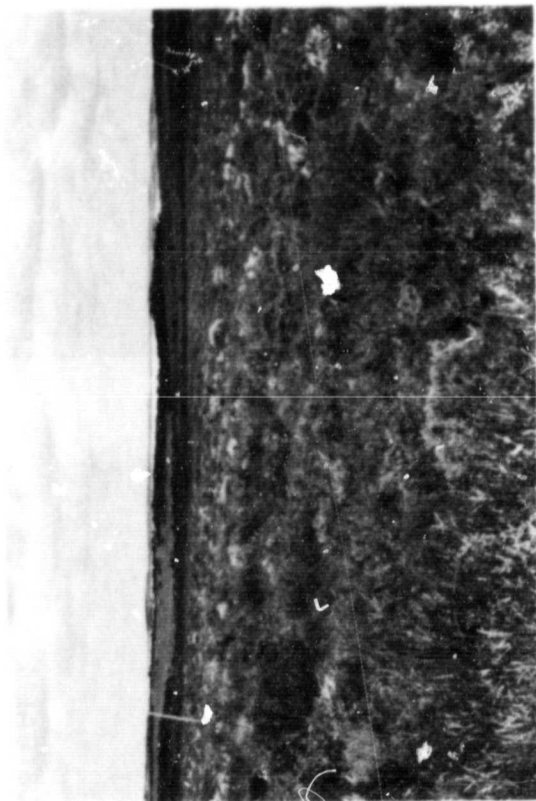


SEGMENT 4423, WESTERN AUSTRALIA

LAND CLEARING OPERATION, NEWLY  
CLEARED LAND SOUTH OF WINTER  
WHEAT FIELD NO. 3.

WESTERN AUSTRALIA—NON-AGRICULTURAL FIELDS (CONCLUDED)

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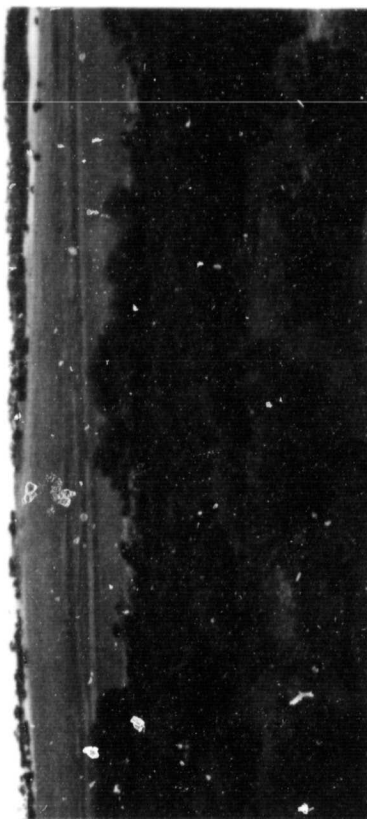
SEGMENT 4425, WESTERN AUSTRALIA

IDLE SCRUB IN THE ALEXANDER  
MORRISON NATIONAL PARK LOCATED  
IN THE NORTHEAST PORTION OF  
SEGMENT 4425. IN THE BACKGROUND  
IS OAT FIELD NO. 28.

EXAMPLE OF DIFFERING RATES OF MATURITY IN A FIELD  
WESTERN AUSTRALIA

SEGMENT 4425, WESTERN AUSTRALIA

- FIELD: 19, WINTER WHEAT
- VARIETY: GAMENYA
- SOWN: JUNE 23, 1981
- SEEDING RATE: 55 kg/ha
- ROW SPACING: 18 cm
- COMMENT: PHOTOGRAPHED  
NOVEMBER 4, 1981. HARD  
AND SOFT DOUGH STAGES  
DUE TO DIFFERING RATES OF  
MATURITY CAUSED BY THE  
SLOPE OF THE SAND HILL  
TOPOGRAPHY. THE CROP  
ALSO HAS A FUNGUS  
PROBLEM (TAKE-ALL) AND  
SOME WATERLOGGING.



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## 7. NEW SOUTH WALES POLITICAL BOUNDARIES

New South Wales region, district, and shire boundaries have undergone changes that are evident when comparing a map from the late 1970's (figure 7-1) with a 1982 map (figure 7-2). The old boundaries are documented in reference 6.

Prior to 1982, there were eight regions, five of which covered the wheat growing areas in New South Wales. The 1982 map, figure 7-2, shows that the former eight regions have been combined to form a total of five regions. The five pre-1982 regions covering the wheat area and their associated agricultural districts and shires are given in table 7-1. The new regions are given in table 7-2, with the eleven designated ground collection sites.

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OF POOR QUALITY

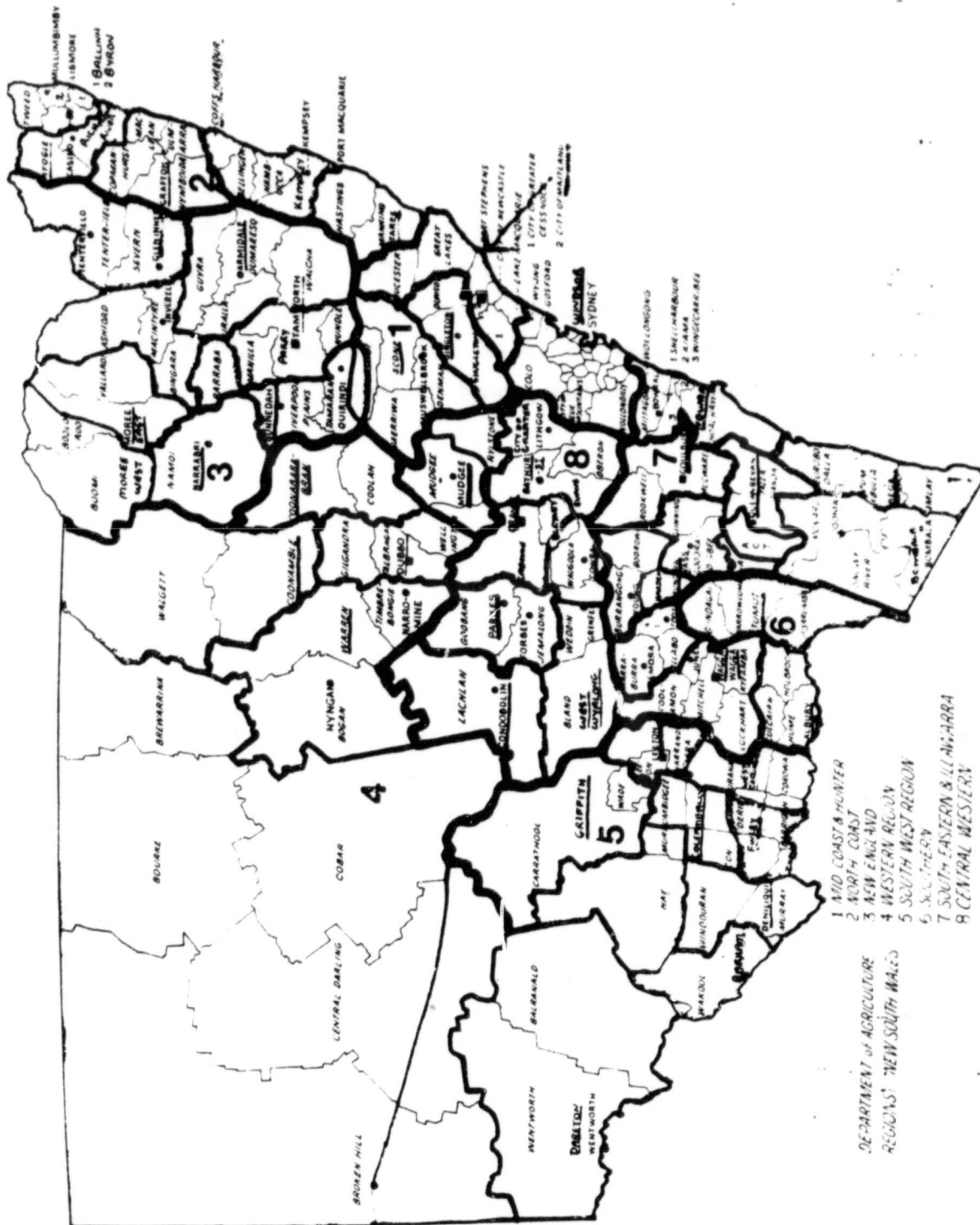


Figure 7-1.- New South Wales, Australia: regions, shires, Agricultural Districts, late 1970's.



DISTRICT AGRONOMISTS (JAN. 1982)  
ARE LOCATED IN TOWN NAMES  
UNDERLINED; REGIONAL OFFICES  
ARE IN BOXES. OTHER NAMES ARE  
SHIRE NAMES; UNDERLINED TOWN  
NAMES SERVE SHIRES.

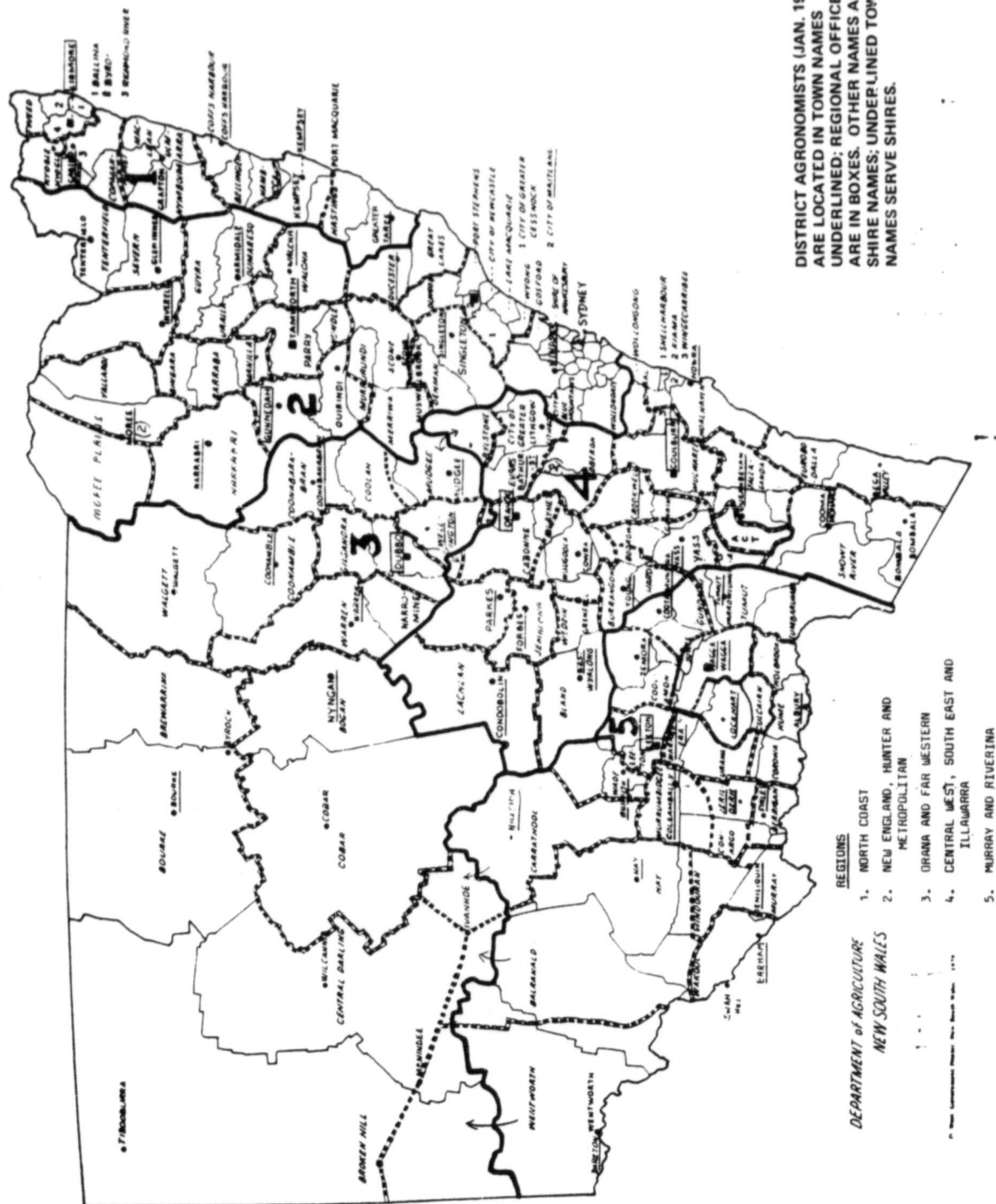


Figure 7-2.- New South Wales, Australia: regions, shires, and District Agronomist Offices, January 1982.

TABLE 7-1.- WHEAT AREA REGIONS PRIOR TO 1982

New England Region (No. 3 on fig. 7-1)	
Agricultural districts*	Shires*
Armidale	Barraba
Glen Innes	Bingara
Gunnedah	Boolooroo
Inverell	Dumaresq
Moree	Gunnedah
Narrabri	Guyra Severn
Tamworth	Inverell
	Manilla
	Namoi
	Nundle
	Parry
	Tamarang
	Tenterfield
	Uralla
	Walcha
	Yallaroi
Western Region (No. 4 on fig. 7-1)	
Bourke	Bogan
Coonabarabran	Bourke
Coonamble	Brewarrina
Dubbo	Central Darling
Mudgee	Cobar
Warren	Coolah
	Coonabarabran
	Coonamble
	Dubbo
	Gilgandra
	Mudgee
	Rylstone
	Timbregongie
	Walgett
	Warren
	Wellington

\*Listed alphabetically.

TABLE 7-1.- CONCLUDED

Southwestern Region (No. 5 on fig. 7-1)	
Agricultural districts*	Shires*
Barham	Balranald
Coleambally	Berrigan
Dareton	Carrathool
Deniliquin	Conargo
Finley	Corowa
Griffith	Hay
Hay	Jerilderie
Leeton	Leeton
West Corurgan	Murray
	Murrumbidgee
	Narrandera
	Urana
	Wade
	Wakool
	Wentworth
	Windouran
Southern Region (No. 6 on fig. 7-1)	
Albury	Boorowa
Cootamundra	Burangong
Tumut	Coolamon
Wagga	Cootamundra
Young	Culcairn
	Gundagai
	Harden
	Holbrook
	Hume
	Illabo
	Kyeamba
	Lockhart
	Mitchell
	Narraburra
	Tumbarumba
	Tumut
Central Western Region (No. 8 on fig. 7-1)	
Bathurst	Bland
Condobolin	Blayney
Cowra	Blaxland
Orange	Carbonne
Parkes	Evans
Wyalong	Goobang
	Jemalong
	Lachlan
	Oberon
	Waugoola
	Weddin

\*Listed Alphabetically.

TABLE 7-2.- NEW REGIONS FOR THE AUSTRALIAN WHEAT AREA AND GROUND COLLECTION SITES

[The shire name listed may actually be a town name within the shire rather than the correct shire name. The map (figure 7-2) was used to list the shire names.]

North Coast Region		New England, Hunter, and Metropolitan Region	
Shire	Ground collection site, segment no.	Shire	Ground collection site, segment no.
Ballina Bellingen Byron Coffs-Harbour Copman-Hurst Greater Taree Hastings Kempsey Kyogle Lismore Maclean Nambucca Nymboida Richmond River Tweed Ulmarra		Barraba Bingara City of Blue Mountains City of Greater Cessnock City of Maitland City of Newcastle Denman Dumaresq Dungog Gloucester Gosford Great Lakes Gunnedah (Liverpool Plains) Guyra Hawkesbury Inverell Lake Macquarie Manilla Merriwa Moree Plains Murrurundi Narrabri Nundle Parry Port Stephens Quirindi (Tamarang) Scone Severn Singleton Sydney Area Tenterfield Uralla Walcha Woolondilly Wyang Yallaro	4013, 4016
Orana and Far Western Region			
Balranald Bogan Bourke Brewarrina Broken Hill Carrathool Central Darling Cobar Coolah Coonabarabran Coonamble Dubbo Gilgandra Mudgee Narromine or (Timbrebongie) Walgett Warren Wellington Wentworth	4030, 4033 4104 4036, 4037, 4038 4042		4095 4015

TABLE 7-2.- CONCLUDED.

Central West, South East, and Illawarra Region		New England, Hunter, and Metropolitan Region	
Shire	Ground collection site, segment no.	Shire	Ground collection site, segment no.
Begavalley Bland Blayney Bombala Boorow Burrangong Cabonne Cooma City of Greater Lithgow Crookwell Eurobodalla Evans Forbes Gunning Harden		Hollbrook Hume Jerilderie Junee Kiama Lachlan Leeton Mulwaree Murray Murrumbidgee Narrandera Oberon Parkes Rylstone Shell Harbor Shoalhaven Snowy River Tallaganda Temora Tumbarumba Tumut Urana Wade Wagga Wagga Wakool Waugoola Weddin Wellington Wentworth Windouran Wingecarribee Wollongong Yass	
Murray and Riverina Region			
Balranald Berrigan Burrangong Carrathool Conargo Coolamoa Corowa Culcairn Deniliquin Gundagai Hay			

## 8. FIELD INVENTORY, NEW SOUTH WALES

The following items appear in this section for each of the eleven ground data collection sites in the state of New South Wales:

- a. Regional list
- b. Segment location map
- c. Aerial photography/1981-82 crop season field inventory
- d. Landsat acquisition date
- e. Corresponding Landsat full frames
- f. Summarization of the corresponding District Agronomist Reports

Because of the large amount of specific field data collected on form A (the "initial farmer interview") and form D (additional clarifying comments), those data can be found in appendix A for both New South Wales and Western Australia. The 35mm slides of the fields are contained in appendix B.

### 8.1 NEW ENGLAND, HUNTER, AND METROPOLITAN REGION

New England, Hunter, and Metropolitan Region is no. 2 on figure 7-2 in section 7 of this document. The shires and segments are:

<u>Shire</u>	<u>Segment no.</u>
Gunnedah	4013, 4016
Quirindi or (Tamarang)	4015
Narrabri	4095

Figures 8-1 through 8-12 consists of maps, aerial photographs, and Landsat acquisitions for segments in the New England, Hunter, and Metropolitan Region.

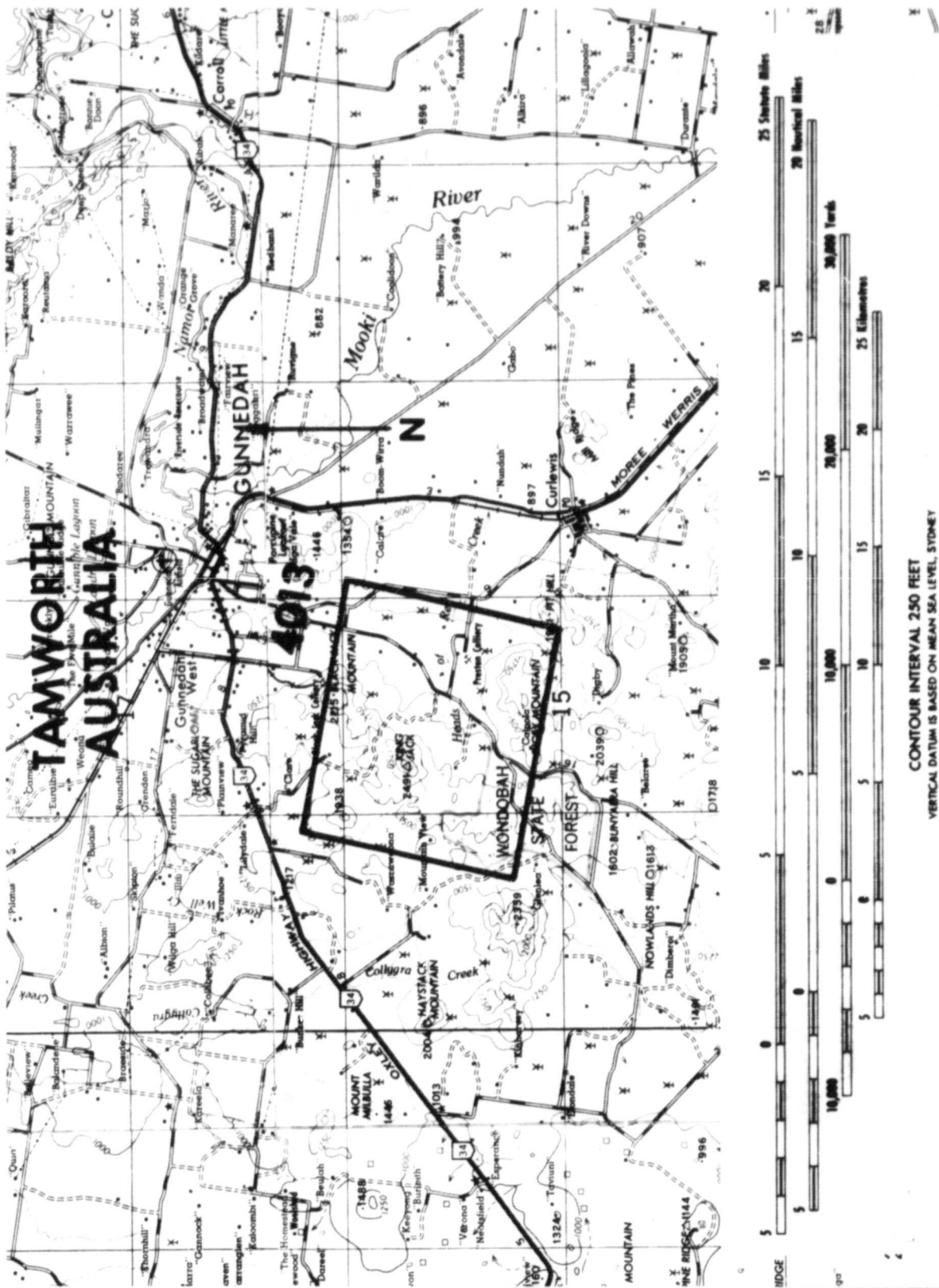


Figure 8-1.-- Sample segment 4013, New South Wales, Australia; map sheet TAMWORTH SH56-13, 1:250,000.

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Figure 8-2.- Aerial photograph (no date available) with 1981-82 inventory; segment 4013, Liverpool plains (Gunnedah), New South Wales, Australia.



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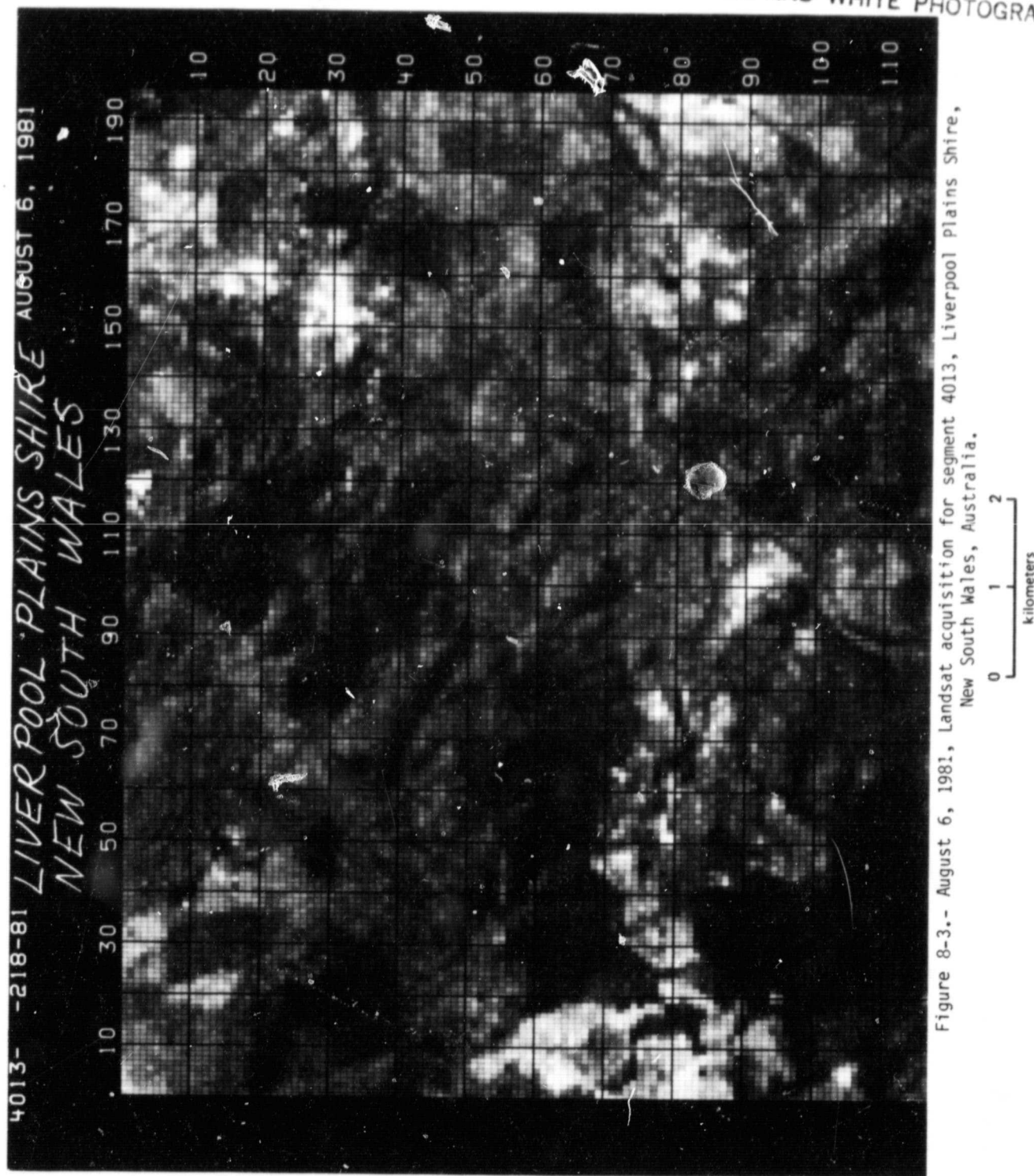


Figure 8-3.- August 6, 1981, Landsat acquisition for segment 4013, Liverpool Plains Shire, New South Wales, Australia.

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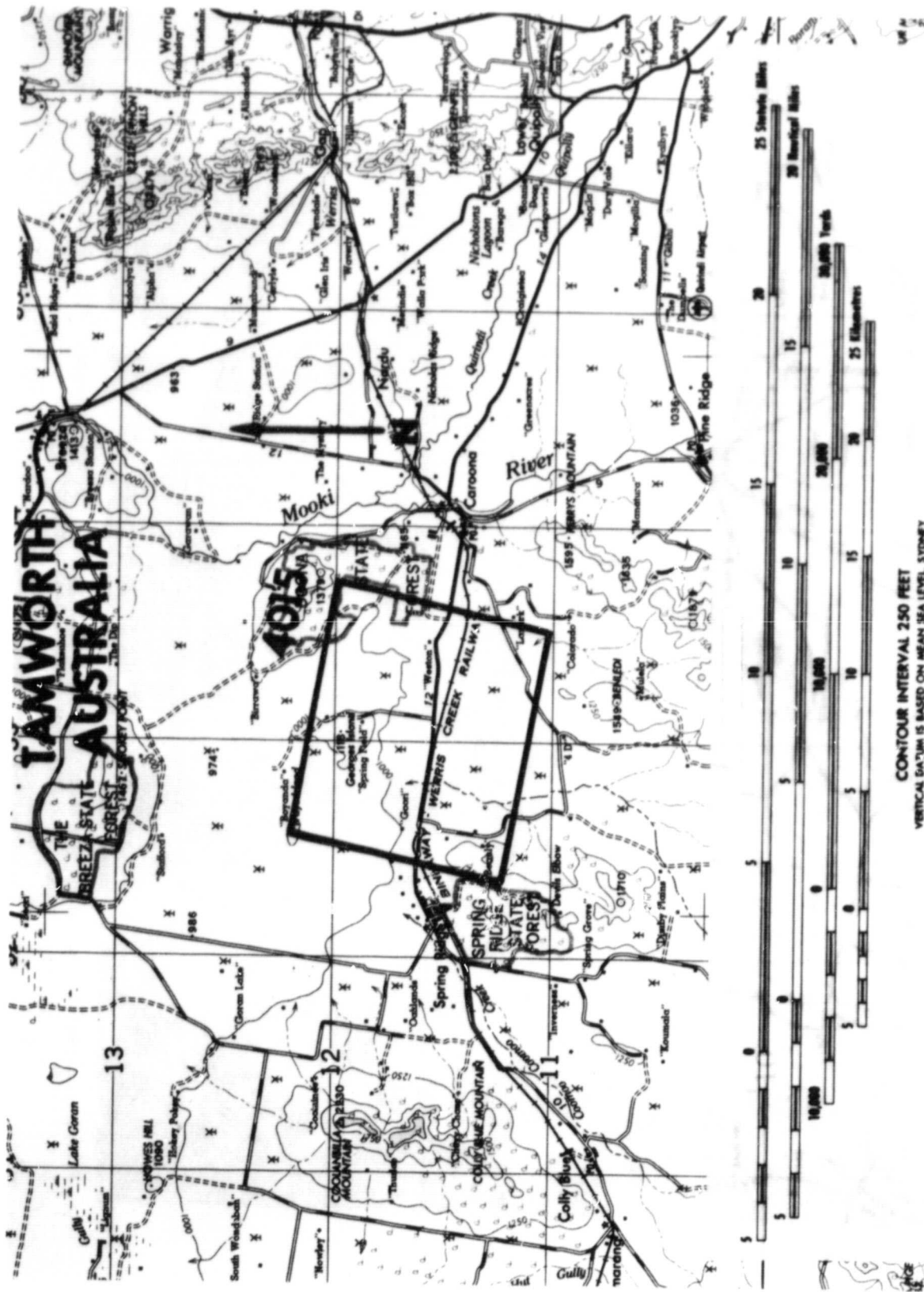


Figure 8-4.- Sample segment 4015, New South Wales, Australia; map sheet TAMWORTH SH56-13, 1:250,000.

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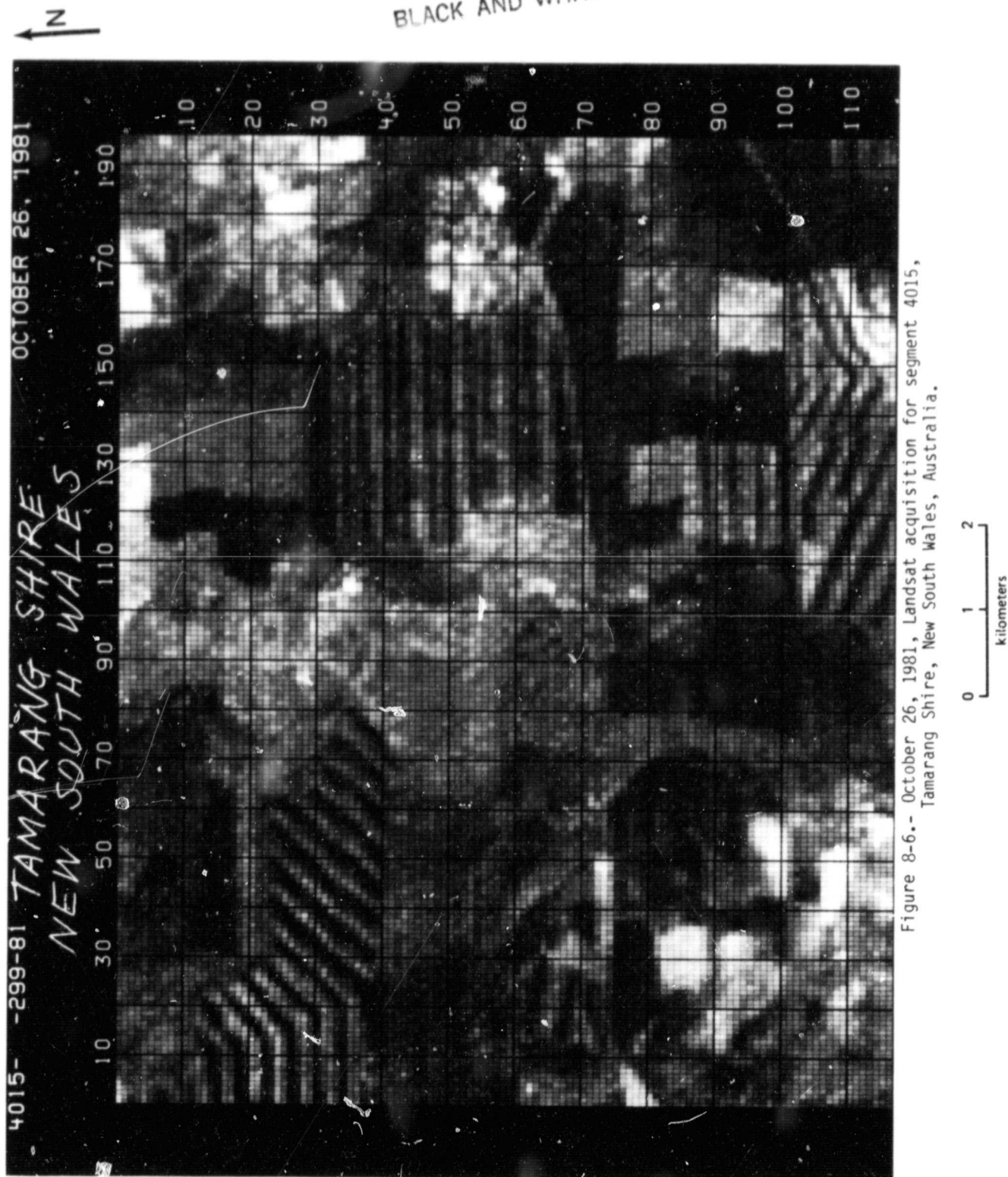


Figure 8-6.- October 26, 1981, Landsat acquisition for segment 4015,  
Tamarang Shire, New South Wales, Australia.



**GILGANDRA AUSTRALIA**

Map showing topographic features, place names, and a rectangular area of interest. The map includes a grid with coordinates 29, 30, 31 and 13, 14, 15. Key locations include Gilgandra, Bogan, and various hills and mountains. A scale bar at the bottom indicates distances in miles (0 to 25) and yards (0 to 25,000). A note at the bottom right states: "CONTOUR INTERVAL 250 FEET. VERTICAL DATUM IS BASED ON MEAN SEA LEVEL, SYDNEY."

8-8

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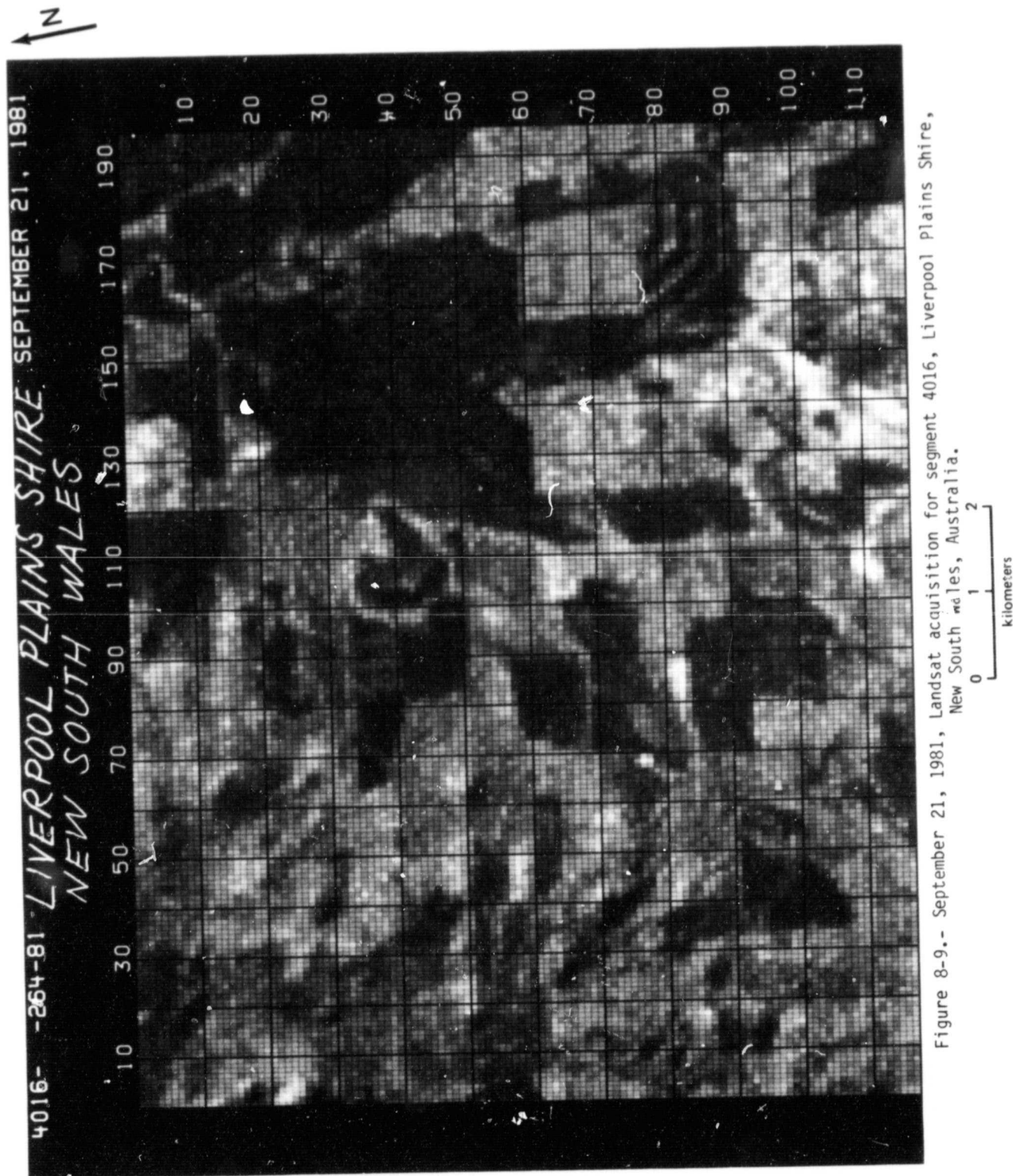


Figure 8-9.- September 21, 1981, Landsat acquisition for segment 4016, Liverpool Plains Shire, New South Wales, Australia.

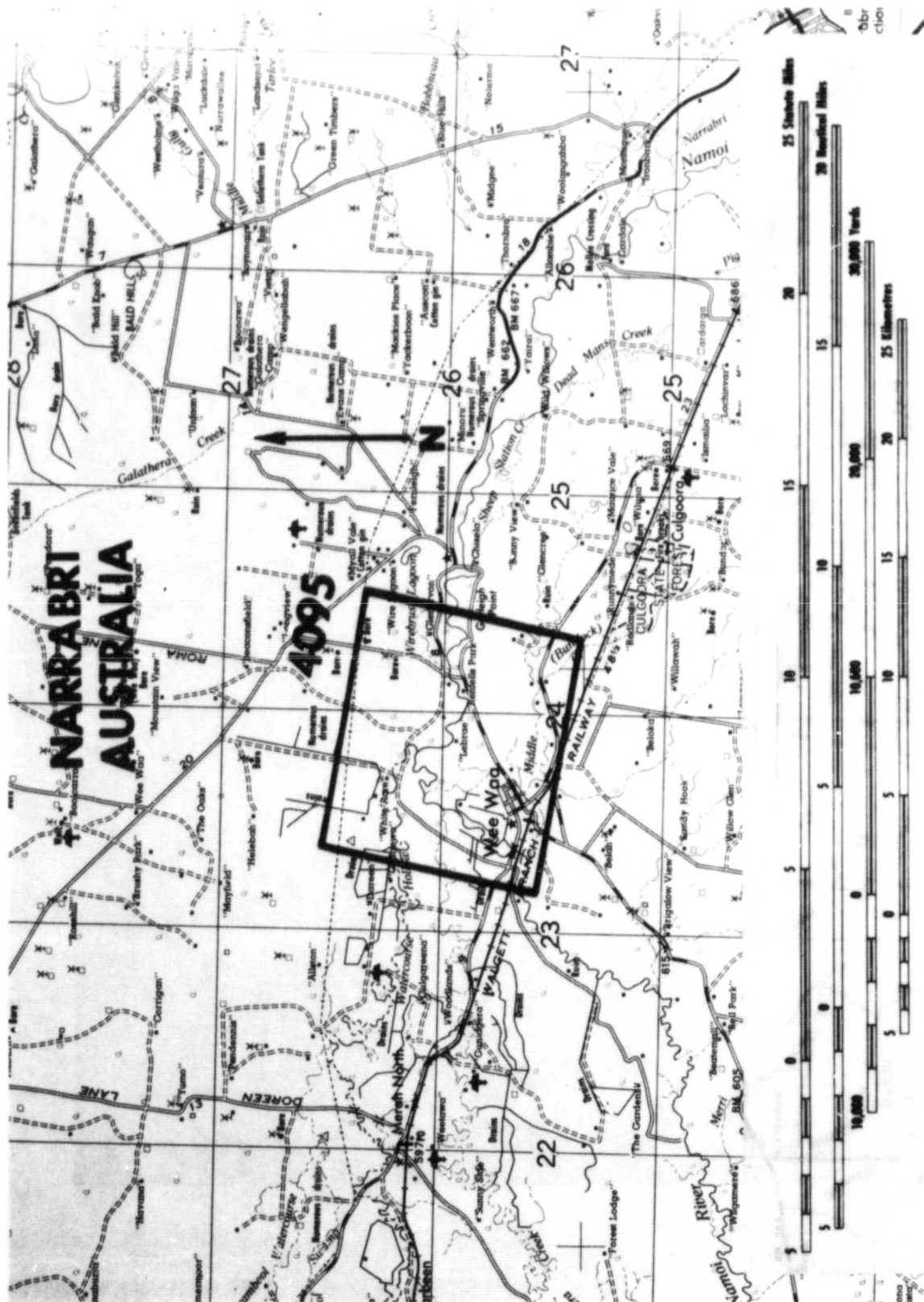


Figure 8-10.- Sample segment 4095, New South Wales, Australia;  
map sheet NARRABRI SH55-12, 1:250,000.



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Figure 8-11.- Aerial photograph (no data available) with 1981-82 inventory; segment 4095, Narrabri (Wee Waa), New South Wales, Australia.

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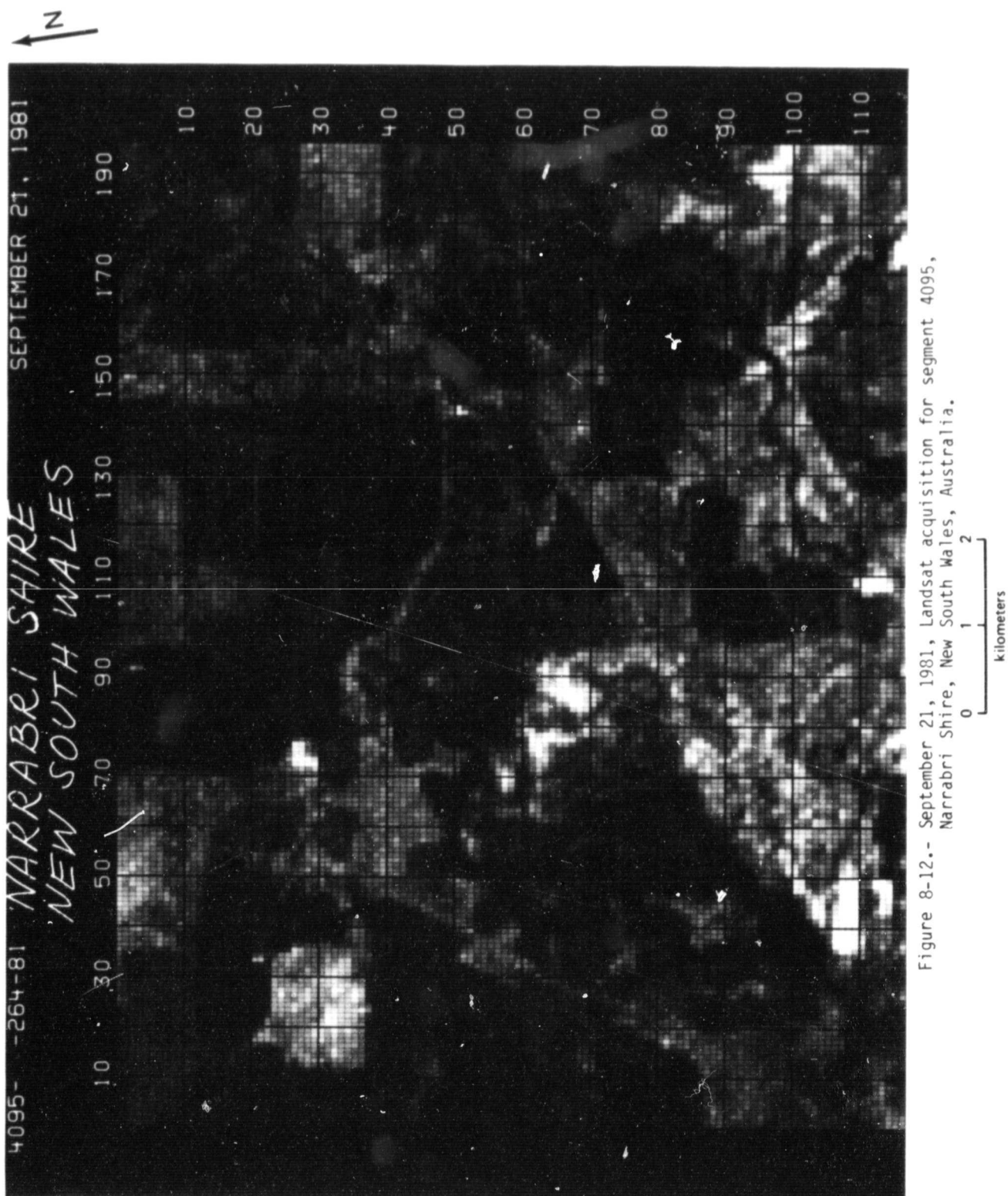


Figure 8-12.- September 21, 1981, Landsat acquisition for segment 4095, Narrabri Shire, New South Wales, Australia.

## 8.2 ORANA AND FAR WESTERN REGION

Orana and Far Western Region is no. 3 on figure 7-2 in section 7 of this document. The shires and segments are:

<u>Shire</u>	<u>Segment no.</u>
Coonabarabran	4030, 4033
Coonamble	4104
Gilgandra	4036, 4037, 4038
Narromine (Timbregongie)	4042

Figures 8-13 through 8-33 consist of maps, aerial photographs, and Landsat acquisitions for segments in the Orana and Far Western Region.

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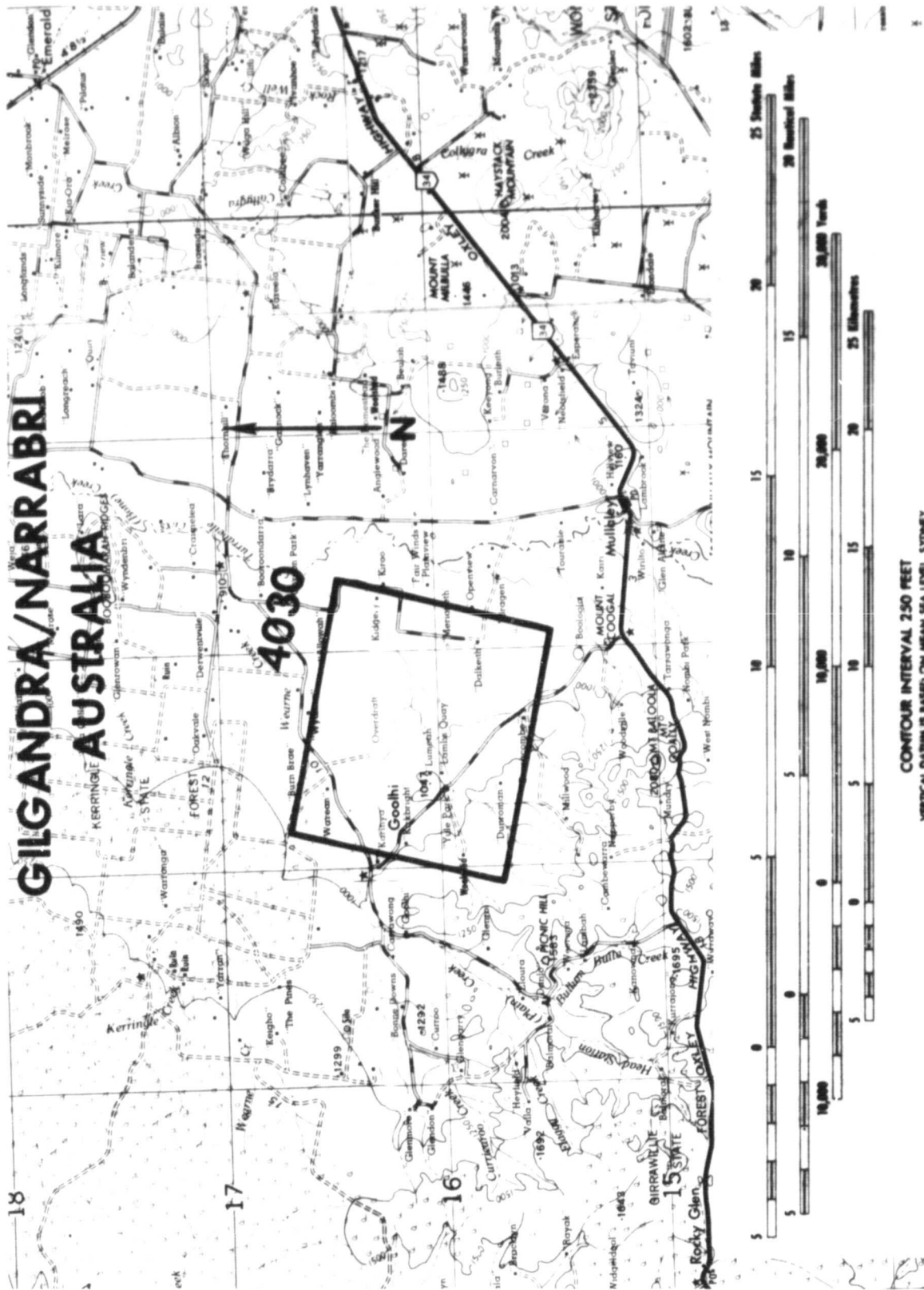


Figure 8-13.- Sample segment 4030, New South Wales, Australia;  
map sheet GILGANDRA/NARRABRI SH55-12, 1:250,000.

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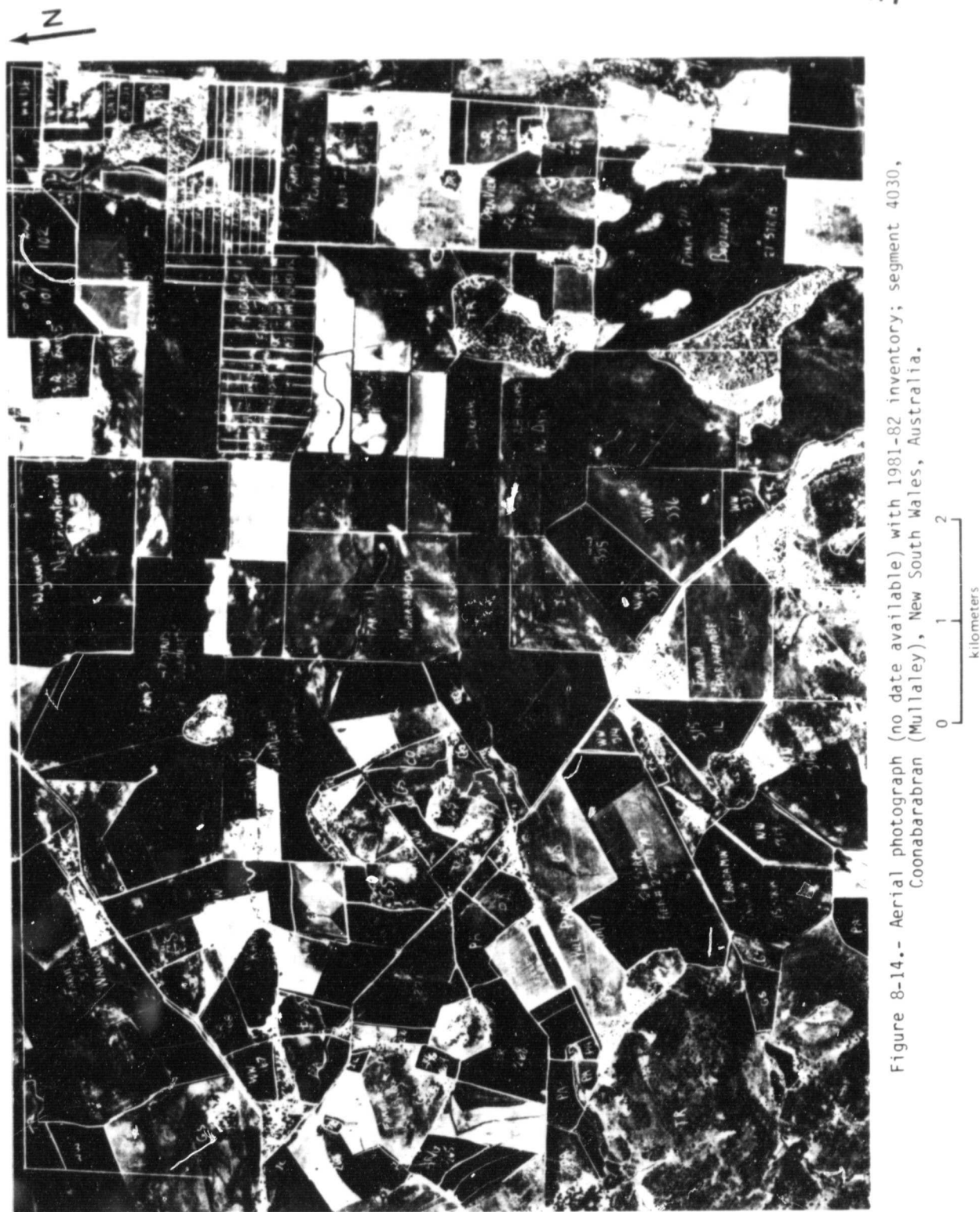


Figure 8-14.- Aerial photograph (no date available) with 1981-82 inventory; segment 4030, Coonabarabran (Mullaley), New South Wales, Australia.



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Figure 8-15.- March 15, 1981, Landsat acquisition for segment 4030, Coonabarabran Shire, New South Wales, Australia.

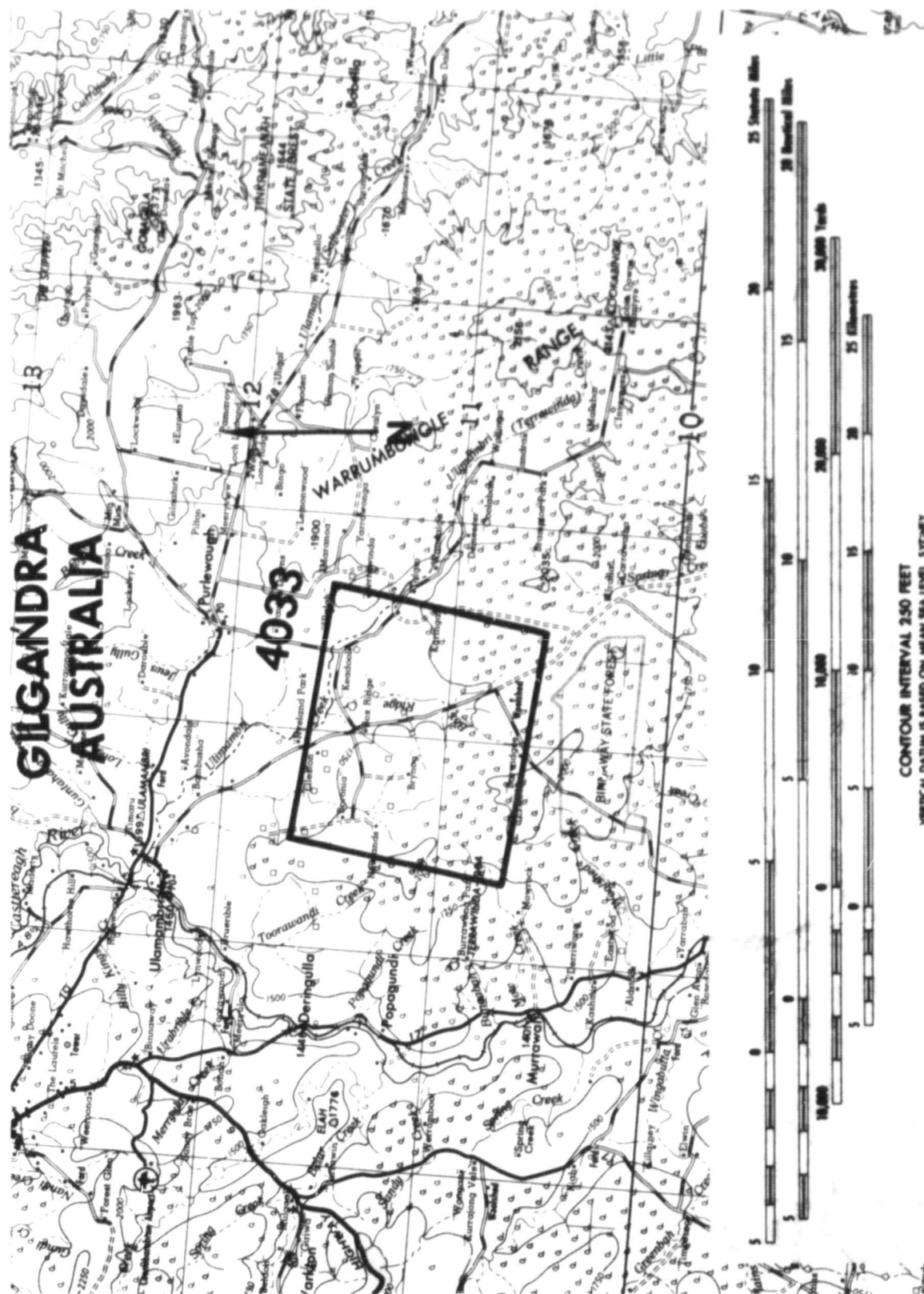


Figure 8-16.- Sample segment 4033, New South Wales, Australia;  
map sheet GILGANDRA SH55-16, 1:250,000.

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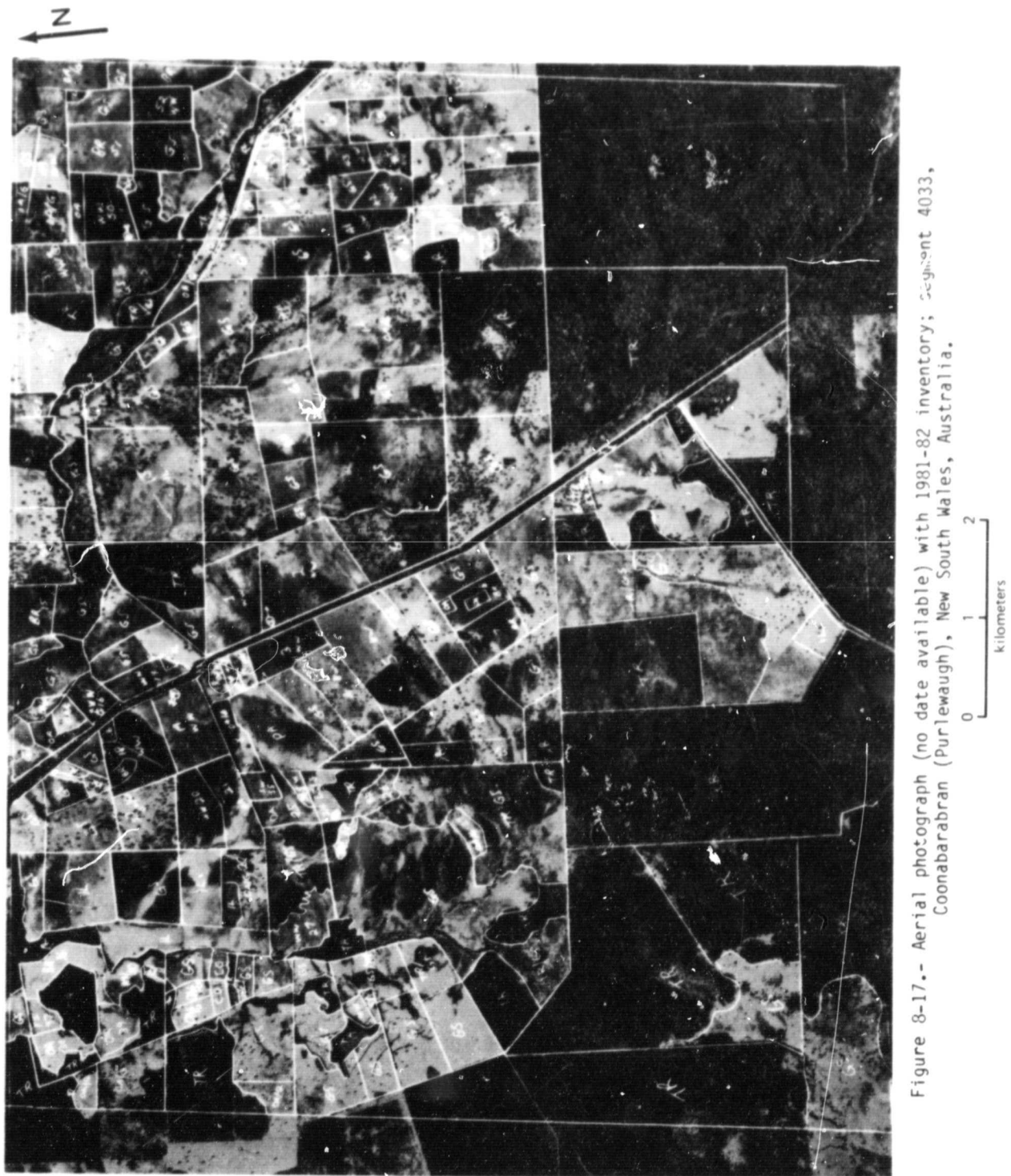


Figure 8-17.- Aerial photograph (no date available) with 1981-82 inventory; segment 4033, Coonabarabran (Purlewaugh), New South Wales, Australia.



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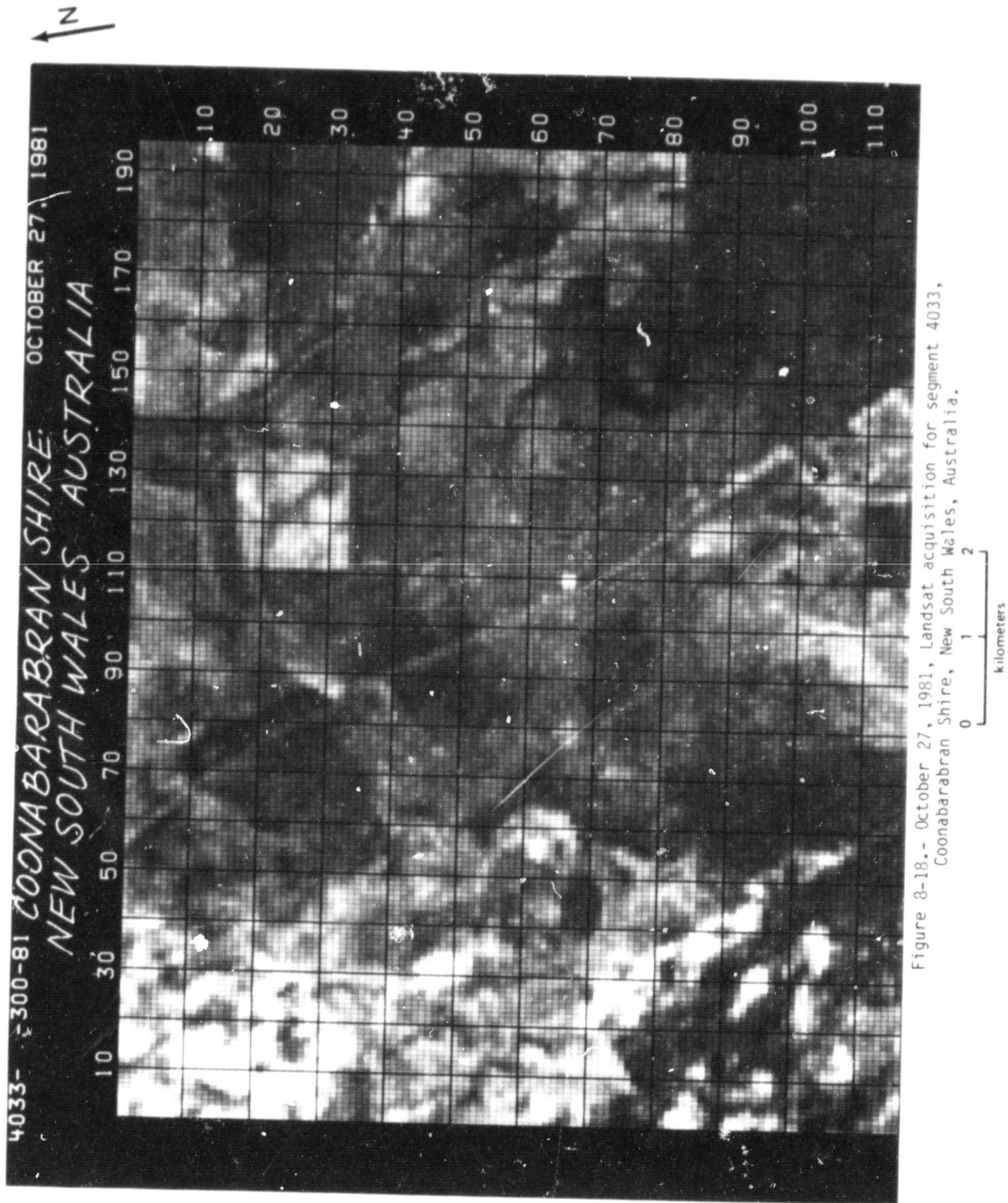


Figure 8-18.- October 27, 1981, Landsat acquisition for segment 4033,  
Coonabarabran Shire, New South Wales, Australia.

CONTOUR INTERVAL 2.50 FEET  
VERTICAL DATUM IS BASED ON MEAN SEA LEVEL SYDNEY

Figure 8-19.- Sample segment 4036, New South Wales, Australia; map sheet GILGANDRA SH55-16, 1:250,000.

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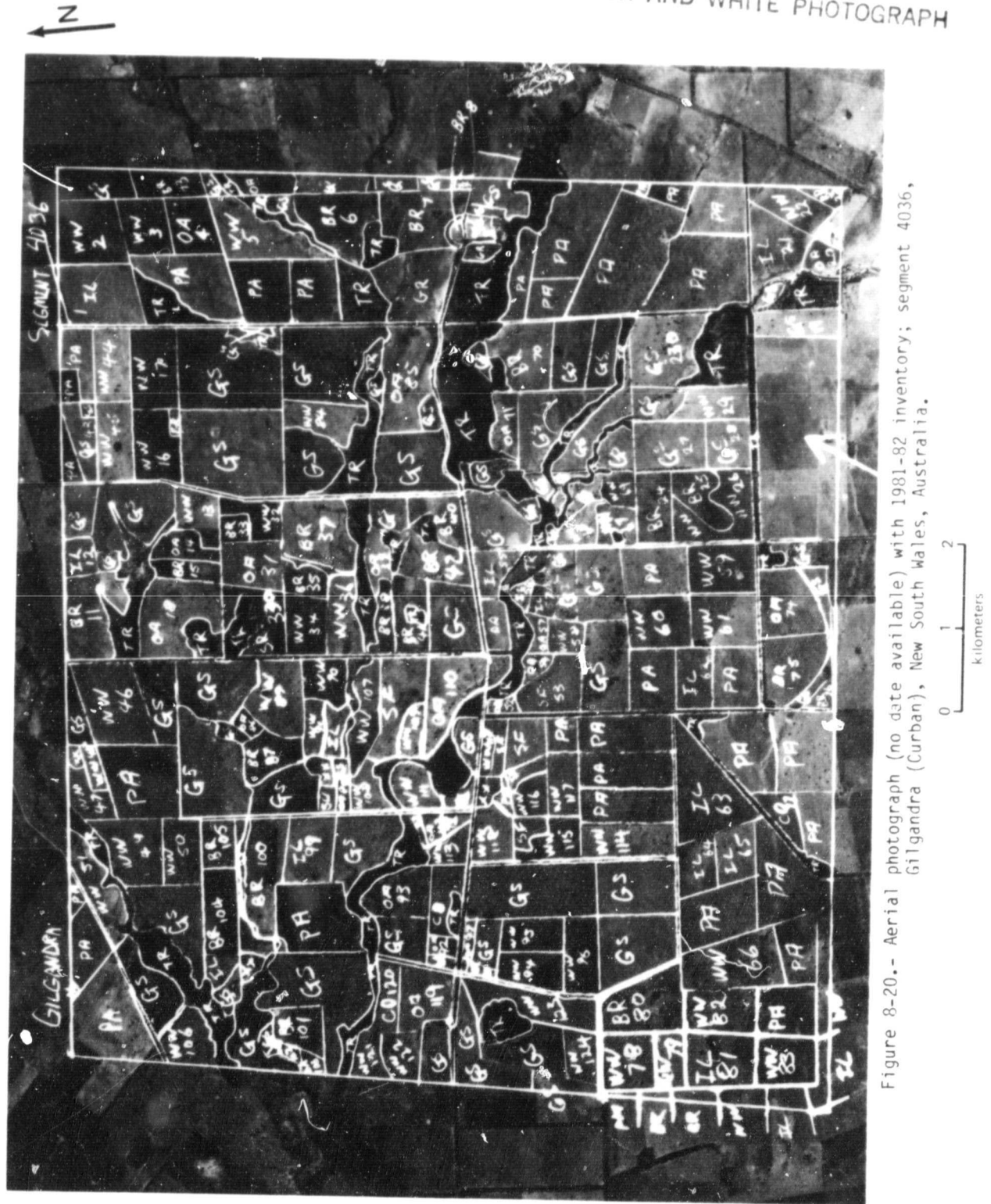


Figure 8-20.- Aerial photograph (no date available) with 1981-82 inventory; segment 4036, Gilgandra (Curban), New South Wales, Australia.

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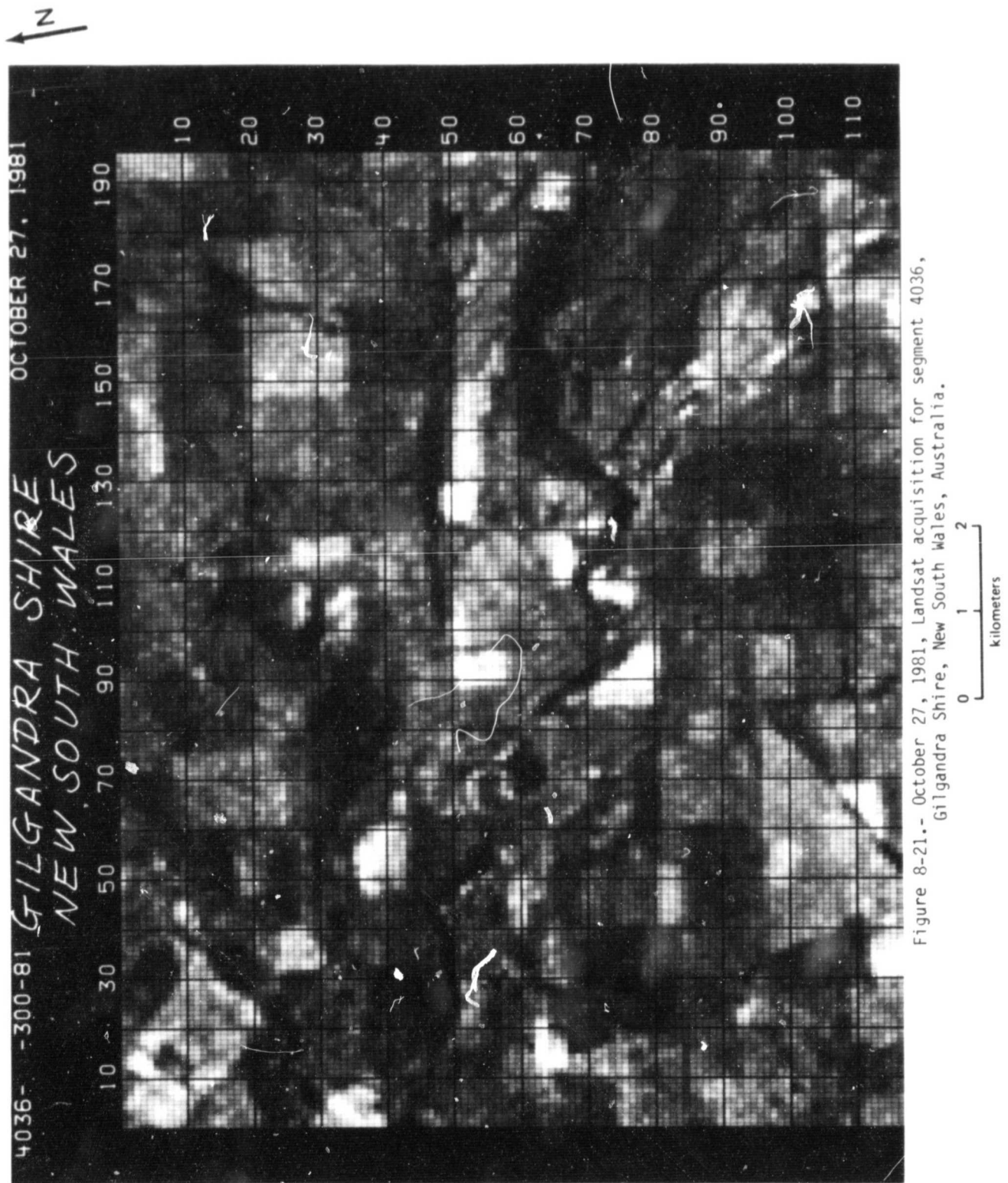


Figure 8-21.- October 27, 1981, Landsat acquisition for segment 4036,  
Gilgandra Shire, New South Wales, Australia.



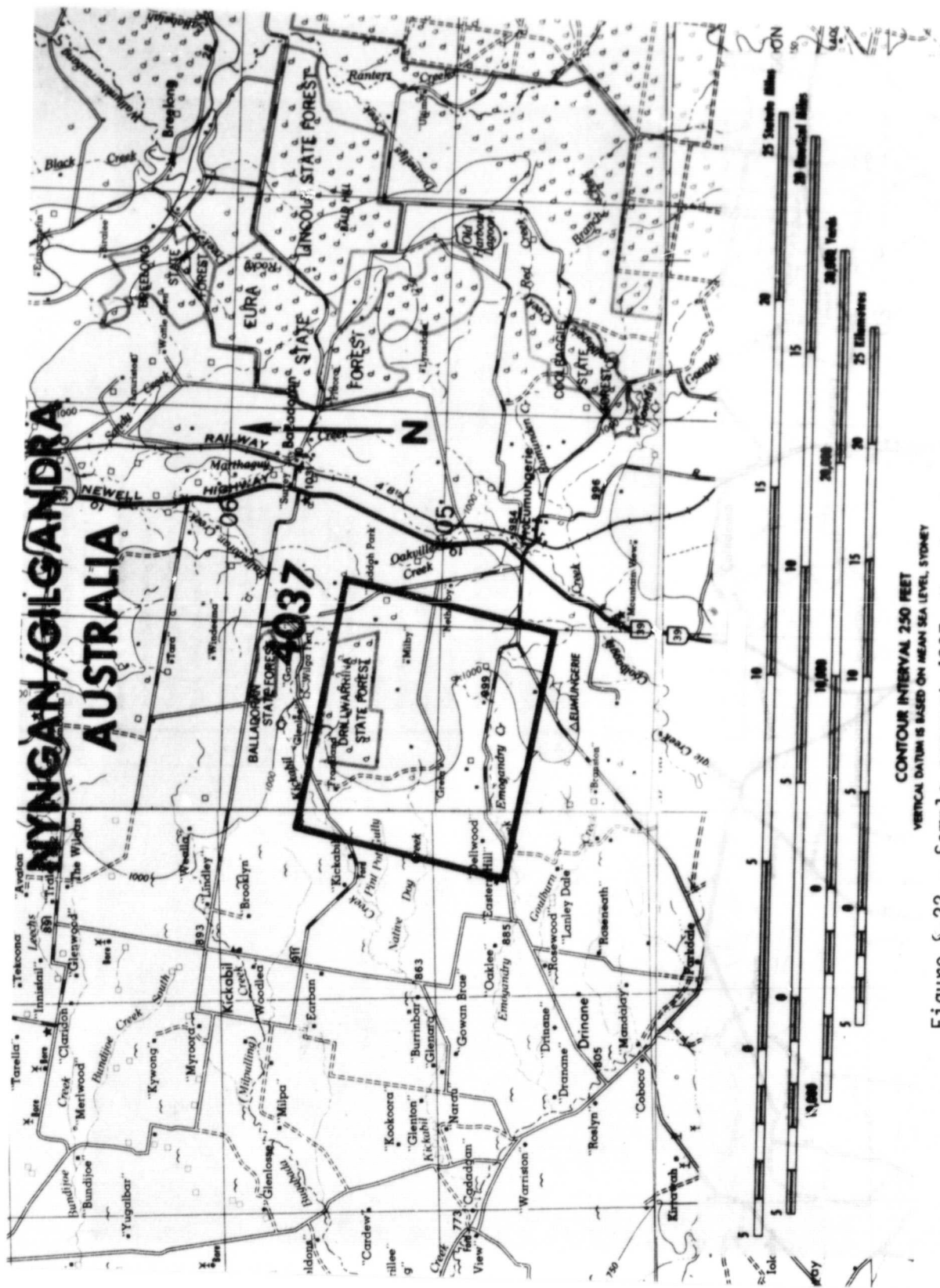


Figure 8-22.- Sample segment 4037, New South Wales, Australia;  
map sheets NYNGAN/GILGANDRA SH55-16, 1:250,000.

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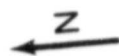


Figure 8-23.- Aerial photograph (no date available) with 1981-82 inventory; segment 4037, Gilgandra (Eumungerie), New South Wales, Australia.

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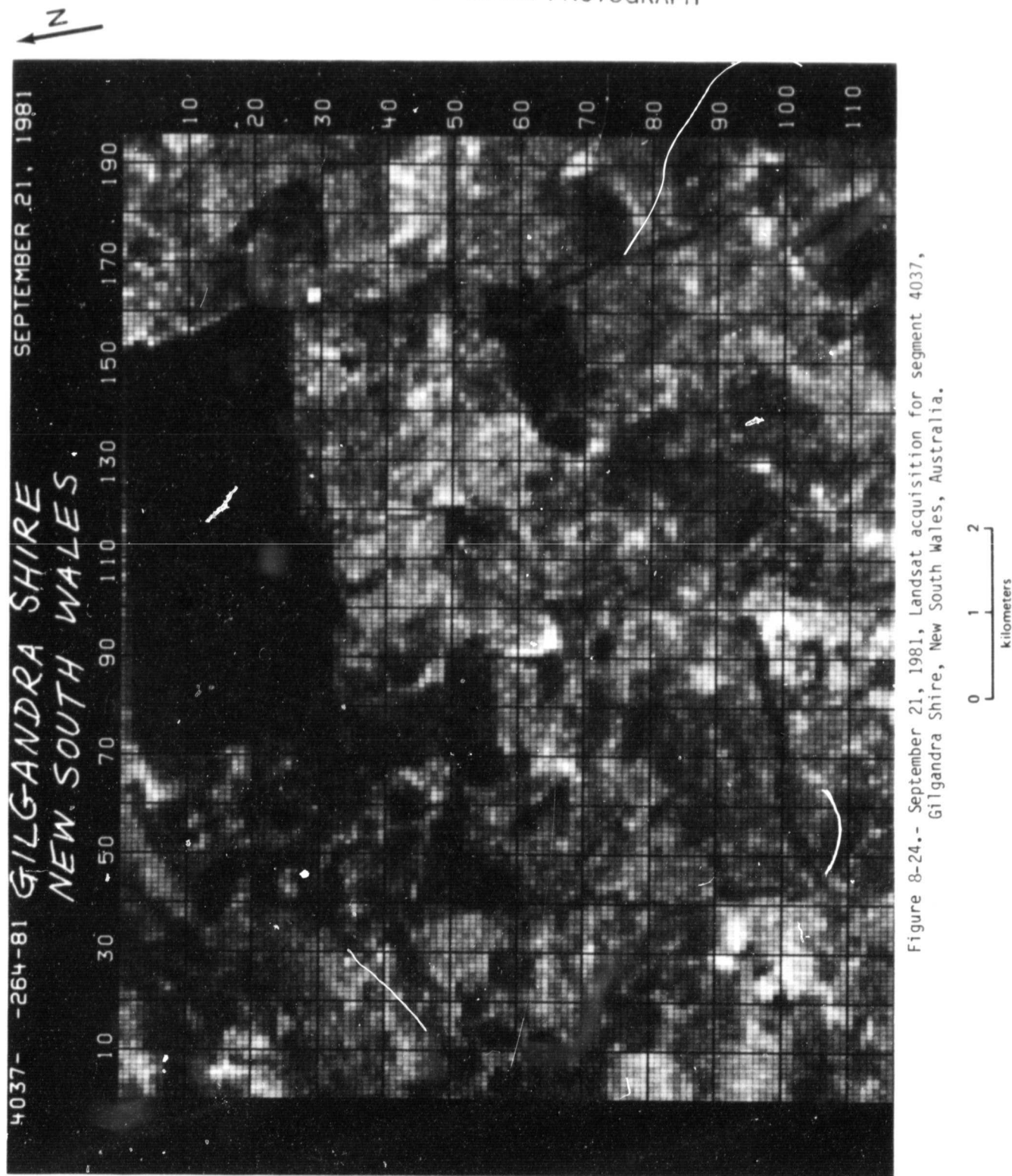
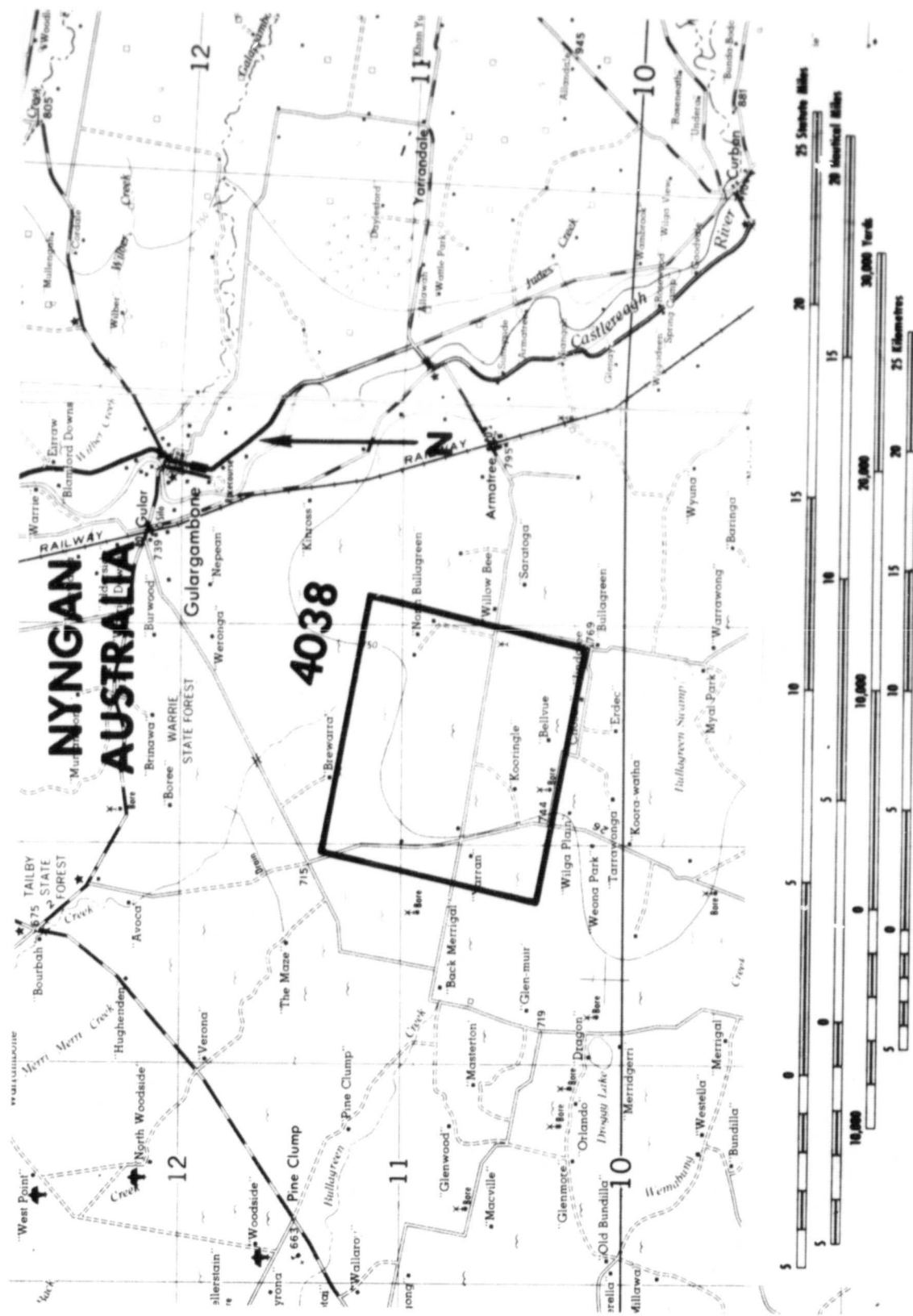


Figure 8-24.- September 21, 1981, Landsat acquisition for segment 4037,  
Gilgandra Shire, New South Wales, Australia.

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CONTOUR INTERVAL 250 FEET  
VERTICAL DATUM IS BASED ON MEAN SEA LEVEL, SYDNEY

Figure 8-25.- Sample segment 4038, New South Wales, Australia; map sheet NYNGAN SH55-15, 1:250,000.



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Figure 8-26.- Aerial photograph (no date available) with 1981-82 inventory; segment 4038, Gilgandra (Armatree), New South Wales, Australia.

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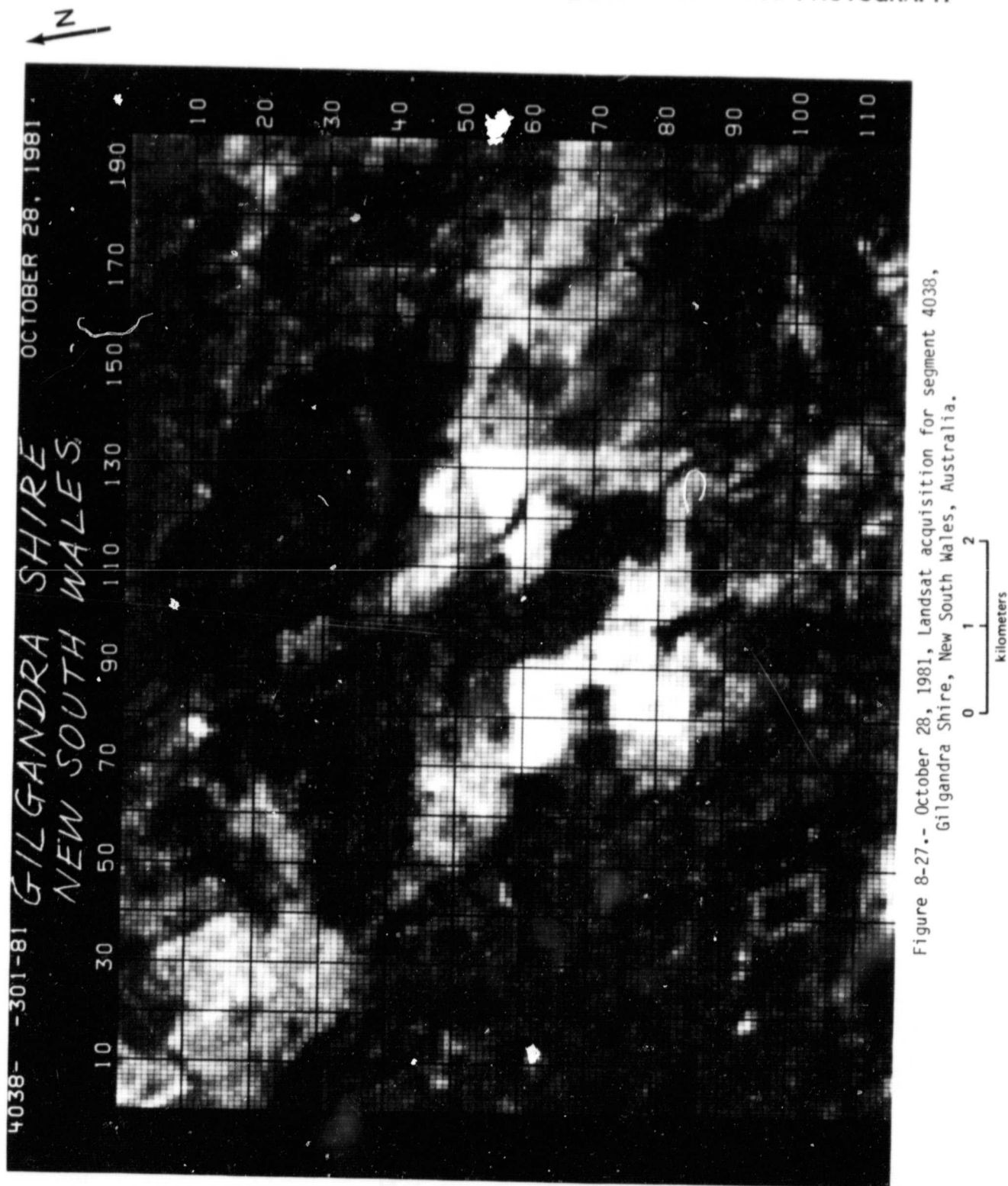
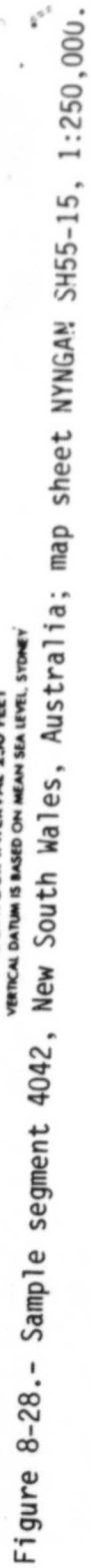


Figure 8-27.- October 28, 1981, Landsat acquisition for segment 4038,  
Gilgandra Shire, New South Wales, Australia.

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Figure 8-29.- Aerial photograph (no date available) with 1981-82 inventory; segment 4042, Timbregongie (Trangie), New South Wales, Australia.



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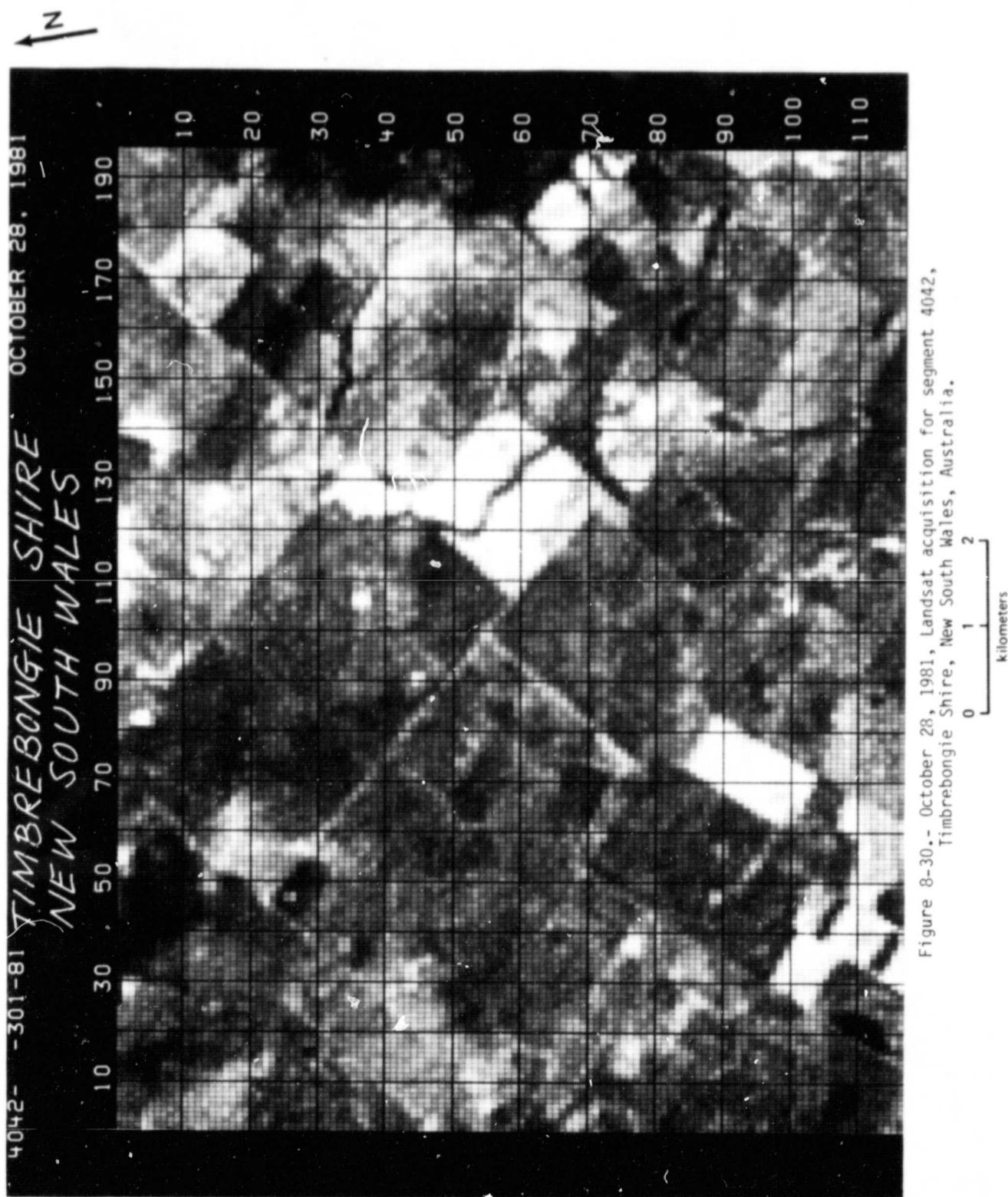


Figure 8-30.- October 28, 1981, Landsat acquisition for segment 4042, Timbrebongie Shire, New South Wales, Australia.

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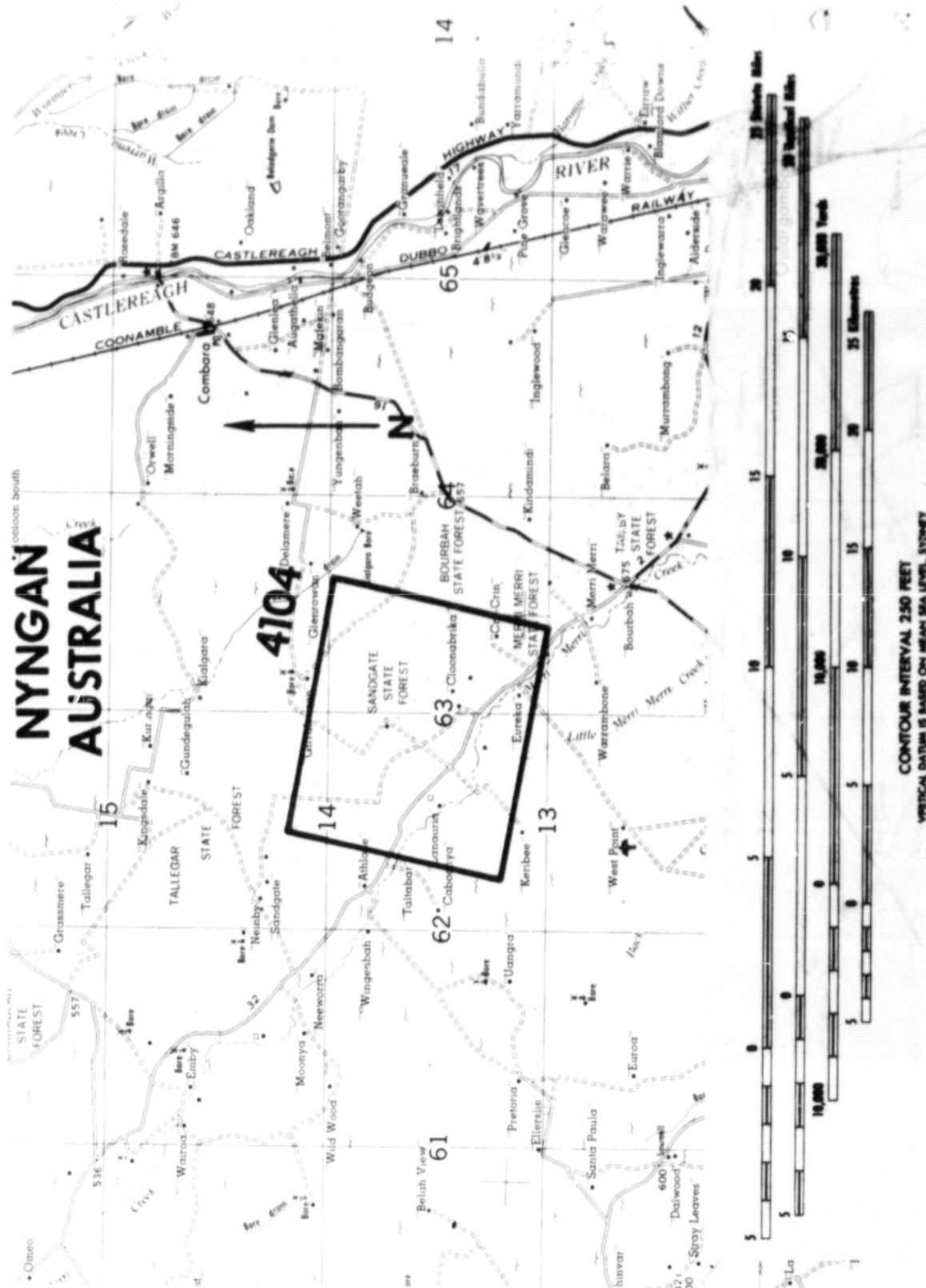


Figure 8-31.- Sample segment 4104, New South Wales, Australia;  
map sheet NYNGAN SH55-15, 1:250,000.

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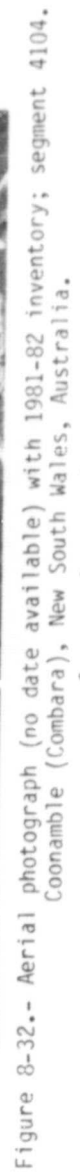




Figure 8-33.- October 28, 1981, Landsat acquisition for segment 4104, Coonamble Shire, New South Wales, Australia.



### 8.3 LANDSAT FULL FRAMES

Figures 8-34 through 8-36 are Landsat full frames containing segments in the two regions of (1) New England, Hunter, and Metropolitan; and (2) Orana and Far Western.

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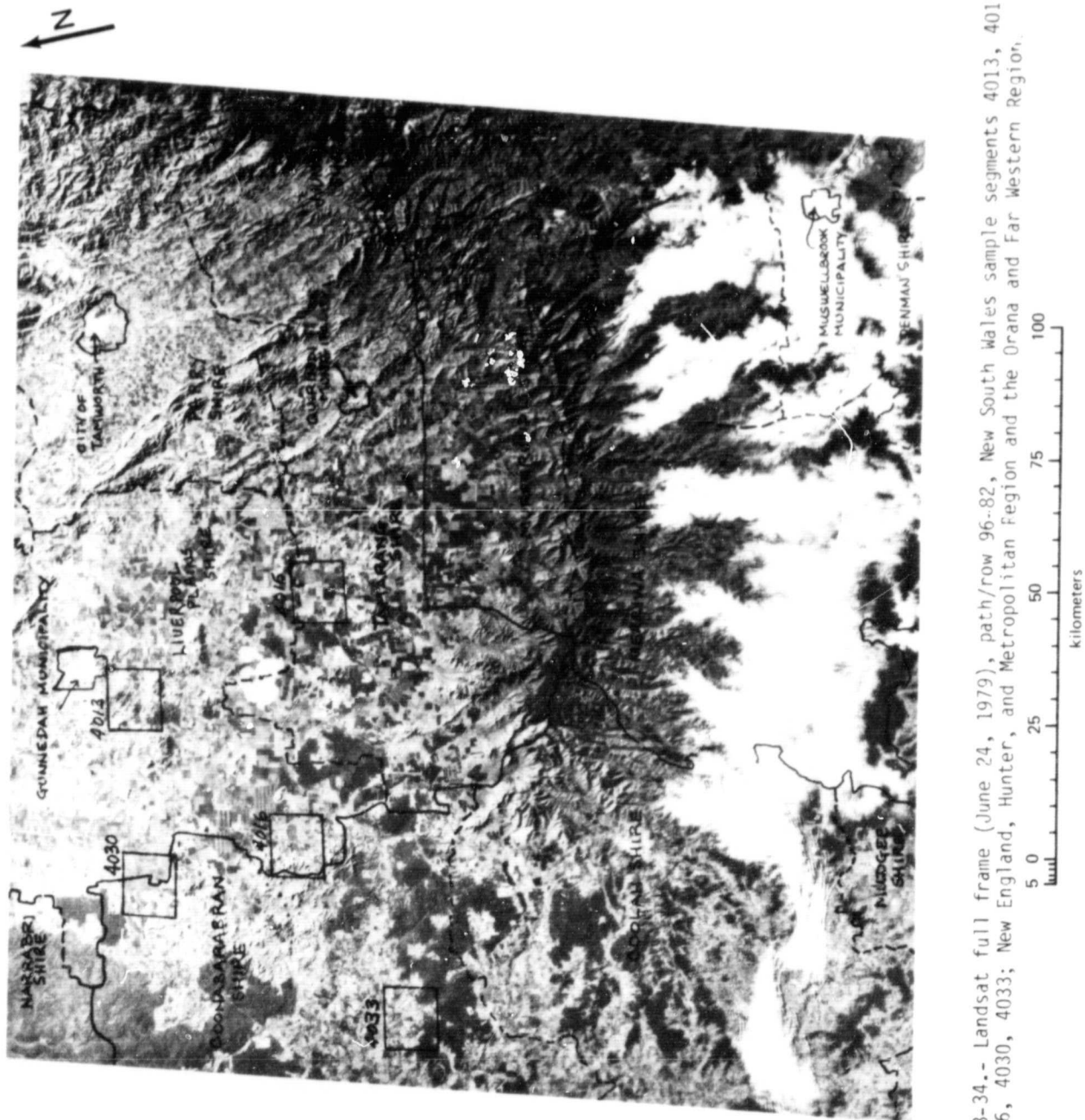


Figure 8-34.- Landsat full frame (June 24, 1979), path/row 96-82, New South Wales sample segments 4013, 4015, 4016, 4030, 4033; New England, Hunter, and Metropolitan Region and the Orana and Far Western Region.

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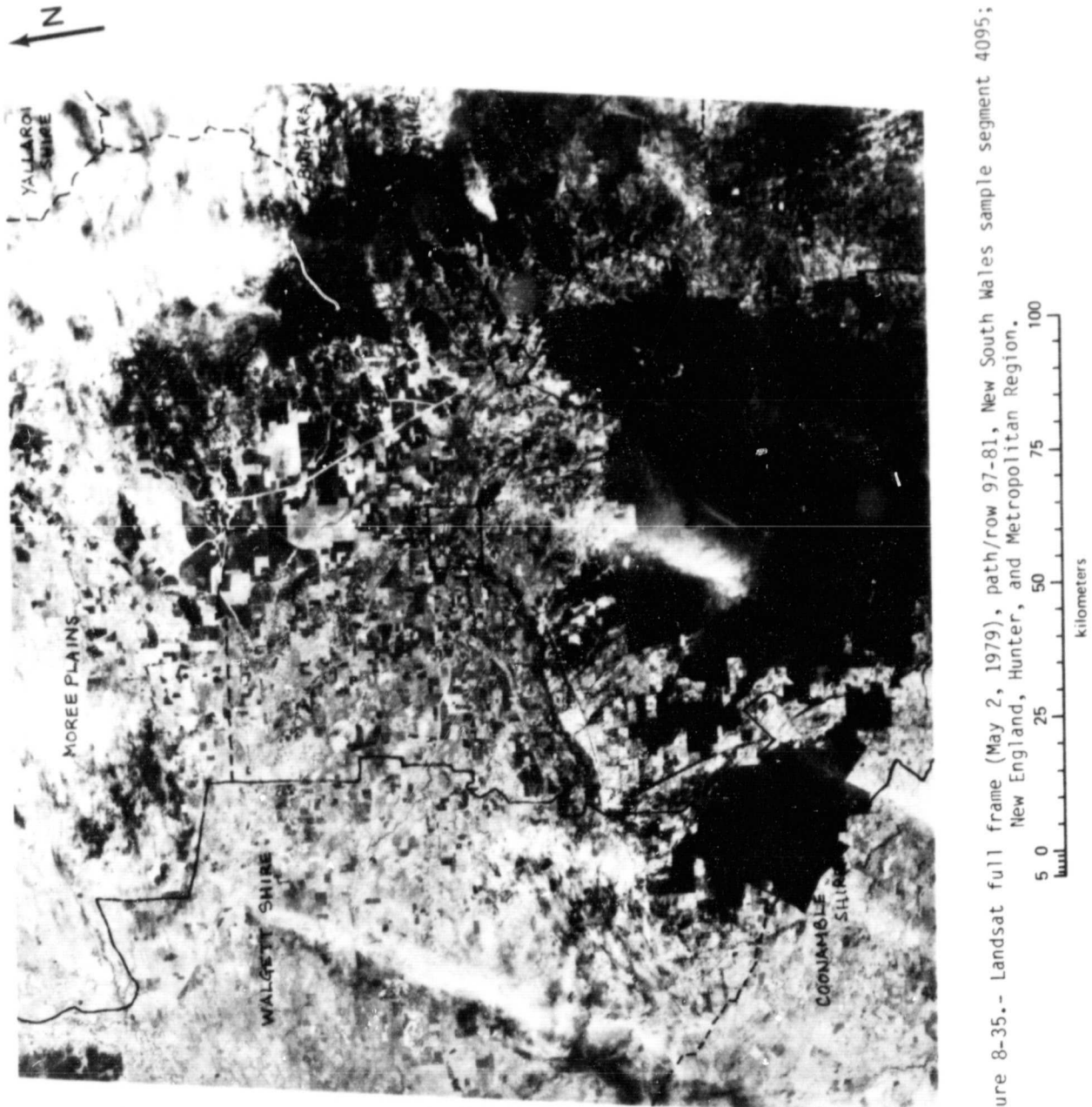


Figure 8-35.- Landsat full frame (May 2, 1979), path/row 97-81, New South Wales sample segment 4095;  
New England, Hunter, and Metropolitan Region.

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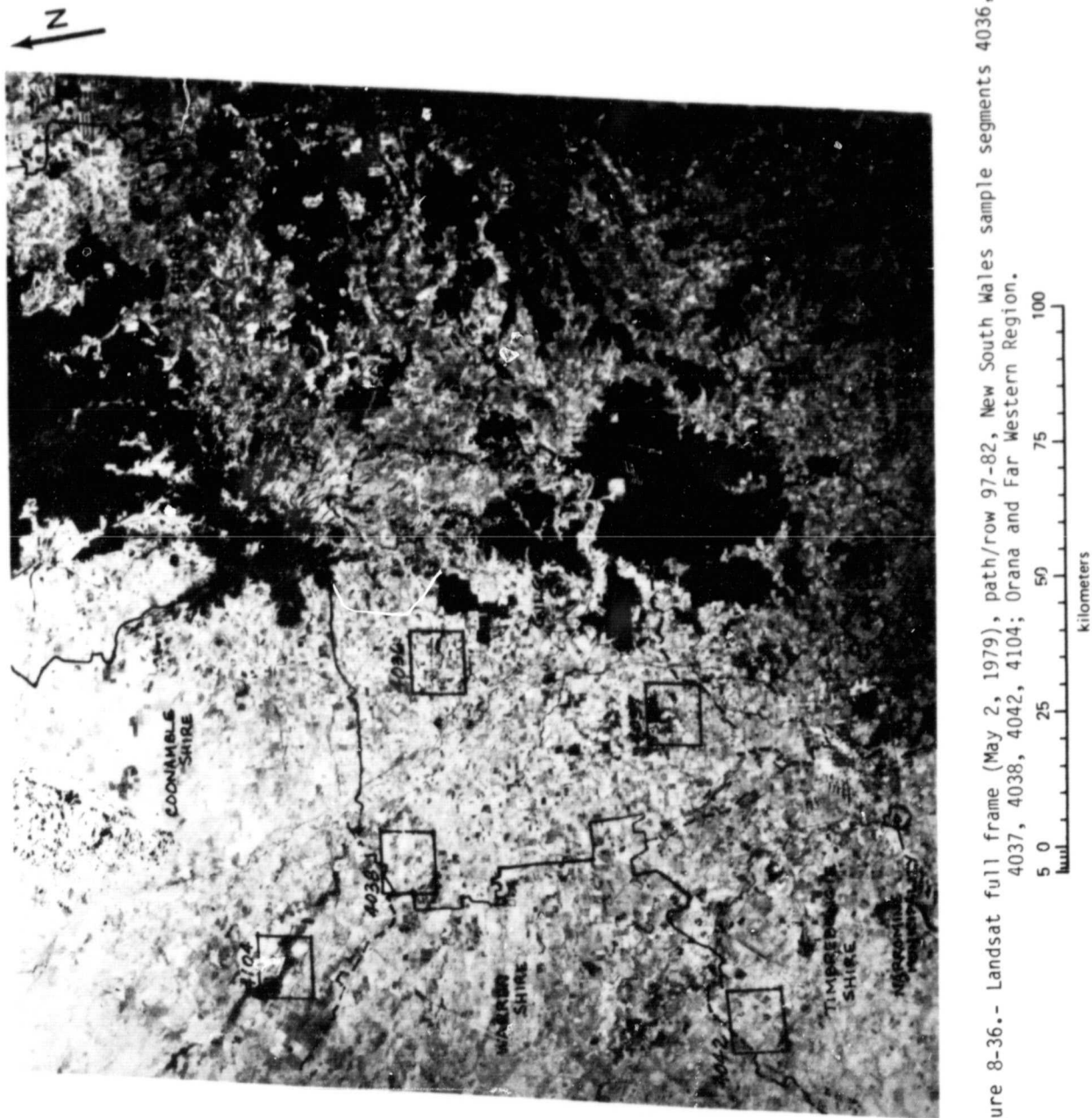


Figure 8-36.- Landsat full frame (May 2, 1979), path/row 97-82, New South Wales sample segments 4036, 4037, 4038, 4042, 4104; Orana and Far Western Region.

#### 8.4 SUMMARIZATIONS OF THE DISTRICT AGRONOMIST REPORTS

Agricultural reports are written monthly for each agricultural district by the District Agronomist. For this document, the material in these reports has been summarized (nearly in its entirety) and included herein. Listed below are the segments organized by district.

- a. Gunnedah District segments 4013, 4015, and 4016
- b. Coonabarabran District segments 4030 and 4033
- c. Dubbo District segments 4036, 4037, and 4038
- d. Warren District segment 4042
- e. Narrabri District segment 4095
- f. Coonamble District segment 4104

Summarization of the  
New South Wales Department of Agriculture  
New England Region  
Monthly Crop Report  
Gunnedah  
March 1981

Seasonal Conditions

Conditions during the month were warm to hot days with warm nights and no rain.

Pastoral Conditions

"Areas such as Barraba remain destitute while others, such as Spring Ridge, Blackville and Premer are not as badly affected."

Winter Cereals

Dry conditions are delaying land preparations for wheat and barley. Rain is needed. Early sown oats have not emerged or are suffering from hot weather. Many oat and barley crops may need resowing. There is a great deal of pressure being put on winter forage crops since the summer grasses did not grow.

Summer Cereals

Sorghum

Harvest is under way for sorghum. The crop is poorer than anticipated with yields down 25 percent. The grain is small and of low density. There has been some regrowth which is delaying harvest of some crops. Crops in Premer are better than others. The yield estimate is 30,000 tonnes.

Summer Oilseeds

Late sown crop conditions vary, but are generally good. Summer oilseeds need rain. The yield potential of the late December to early January crop was reduced by 20 percent due to no rain this month. Area estimates are:  
(a) sunflower estimated area is 3,700 hectares, and (b) soybean estimated area is 2,500 hectares.

It is getting late to sow Lupins.

Summarization of the  
New South Wales Department of Agriculture  
New England Region  
Monthly Crop Report  
Gunnedah  
April 1981

Seasonal Conditions

No rain was received during the month; lower temperatures prevailed, with a light frost occurring on the Breeze Plain the 29th of the month.

Pastoral Conditions

Drought conditions persist.

Winter Cereals

Growers await rain.

Summer Cereals

Sorghum

The sorghum harvest is continuing. Some late sown crops are aphid infested. Honeydew will cause harvest problems unless rain comes.

Summer Oilseeds

Sunflowers

The very late crop is flowering. There is a risk of frost injury. Three thousand and seven hundred (3,700) hectares were planted. The January planted crops have suffered moisture stress.

Soybeans

Twenty five hundred (2,500) hectares of soybeans are approaching harvest maturity.

Winter Oilseeds

Less than the usual area is expected to be planted. Growers will plant cereals instead.

Summarization of the  
New South Wales Department of Agriculture  
New England Region  
Monthly Crop Report  
Gunnedah  
May 1981

Seasonal Conditions

Excellent soaking rain was received, the average was 70-80mm. Temperatures were reasonably high, but should drop. Occasional frost occurred.

Pastoral Conditions

Slow growth occurred due to cold weather, but winter species should provide feed.

Winter Cereals

Sixty to seventy percent of the crop will be planted since the rain has occurred. Red and light soils will be planted 3 weeks to a month late. The southern half of the district should be planted on time. Weeds will be a problem due to the absence of fall rains.

Area estimates:

Wheat 190,000 ha

Barley 50,000 ha

A large proportion of the barley is for green feed. The oat area is down due to seasonal conditions.

Summer Cereals

"Current rain and cold conditions will assist sorghum harvest. Secondary growth and aphid honeydew have caused holdups."

Summer Oilseeds

The cold weather will assist the sunflower harvest.

Winter Oilseeds

The Lupin area is down to "seed increase only" due to seasonal conditions preventing sowing. The remainder of the winter oilseed crop types will not be planted.



Summarization of the  
New South Wales Department of Agriculture  
New England Region  
Monthly Crop Report  
Gunnedah  
June 1981

Seasonal Conditions

Conditions were mild to cold; frost occurred on several days. Rain was received early in the month with 45.4mm reported for Gunnedah; some areas reported higher amounts. District-wide rain of 18-20mm was occurring at the time this report was made.

Pastoral Conditions

Natural medics are growing steadily. Wild oats are providing feed. Lucerne is providing quick feed, especially the winter active varieties.

Winter Cereals

Prior to the recent rain, 40-50 percent of the sowing took place. The recent rain will delay sowing 5-7 days. Fallow spraying is being used.

Summer Cereals

There are remnants of the sorghum crop still to be harvested but not much.

Summer Oilseeds

Sunflowers

The late maturing crops are still being harvested; there has been some deterioration in the condition.

Soybeans

The soybean harvest is complete.

Safflower

A small area may be sown, but no rapeseed nor linseed has been planted.

Summarization of the  
New South Wales Department of Agriculture  
New England Region  
Monthly Crop Report  
Gunnedah  
July 1981

Seasonal Conditions

Frequent heavy frosts occurred this month. The month had mild sunny days between the rains. All soils are wet, with some light soils too wet. Rain in the amount of 62.2mm was recorded at Gunnedah for the 11 days of rain, but the bulk of the rain occurred on the 22 to 28 of July.

Pastoral Conditions

There was slow medic growth due to the cool-cold weather conditions. Winter active lucerne is doing well. Good feed is being obtained from the wild oats and barley grass.

Winter Cereals

A break in the rain in early July allowed sowing, but wet soils hampered operations.

Seedlings have taken longer to emerge than normal; yellow blotching is common on wheat and barley. On some barley fields, the seedlings have failed to emerge; the problem may be cold related. Widespread blue oat mite damage was reported. Area estimates:

Wheat	140,000 ha	Triticale	6,000 ha
Barley	40,000 ha	Oats	15,000 ha

Summer Cereals

Summer fallows have good moisture, but weeds are a problem... The value of the crop will dictate the area grown for the sunflower and sorghum crops. The sunflower area may go up due to interest in early sowing.

Summer Oilseeds

There is some interest in safflower as an alternate crop; 500 ha may be planted.

Summarization of the  
New South Wales Department of Agriculture  
New England Region  
Monthly Crop Report  
Gunnedah  
September 1981

No August report is available.

Seasonal Conditions

"A brief respite from the persistent dry, windy weather came late in the month with general falls of about 17-20mm." Mild to warm days occurred with not as much threat of frost. Rain of (50-70mm) is needed.

Pastoral Conditions

There is a reasonable amount of feed from barley grass and burr medic, but rain is needed to stimulate the summer growing species.

Winter Cereals

The winter cereal situation is variable. "In the Quirindi Blackville-Premier areas, crops have maintained their potential. Crops to the north toward Mullaley, Boggabri and Gunnedah have deteriorated considerably. The recent rain improved crops a little."

Summarization of the  
New South Wales Department of Agriculture  
New England Region  
Monthly Crop Report  
Gunnedah  
October 1981

Seasonal Conditions

Persistent showers occurred for the last 3 weeks. Conditions have been mild to cool, with minimal evaporative losses. Rain in the amount of 98mm was received at Gunnedah, with good rainfall throughout district.

Pastoral Conditions

"Current conditions have boosted pasture growth and graziers should go into the summer with ample feed."

Winter Cereals

Crops have benefited from the moist, cool spring. Early maturing crops filled well; late crops have also done well.

Summer Cereals

Twenty percent of the sorghum has been planted; it emerged with the low soil temperature. If there is a break in the rain, planting will begin again in 10 days or so.

Oilseeds

"September-October sown sunflowers are being consolidated by current conditions." The present soil moisture will allow planting of the December to January crop; the total area will depend on November conditions. If conditions allow for sorghum-sowing, the sunflower crop will be down in acreage; if it stays wet, then there should be an increase in sunflower acreage. Lupins were sown very late but have done well.

Summarization of the  
New South Wales Department of Agriculture  
New England Region  
Monthly Crop Report  
Gunnedah  
November 1981

Seasonal Conditions

Mild to cool conditions continued during the first part of the month. Soil temperatures were depressed by cold nights, then rain decreased them further; one or two frosts occurred, also isolated hail. The latter part of the month produced suitable soil temperatures for sorghum.

Pastoral Conditions

This month there was vigorous growth of plains grass, lucerne, and wild oat feed.

Winter Cereals

Crops have ripened with the hot weather. Weed and late tillering are problems with some crops, but continued hot weather should solve the problem. Deliveries to silos are slow; many deliveries are being sent back due to excessive green grain.

Summer Cereals

Sorghum

Planting of the sorghum crop continues. Germination and emergence were slowed by cold soil conditions. The area planted may be down 10 percent. Recent plantings emerged quickly and produced satisfactory stands.

Oilseeds

August-September sunflowers have had excellent, vigorous growth. More sunflowers may be planted since it is too cold and wet for sorghum.

Summarization of the  
New South Wales Department of Agriculture  
New England Region  
Monthly Crop Report  
Gunnedah  
December 1981

Seasonal Conditions

Patchy rain occurred at the beginning of December, then hot dry conditions prevailed. Fifty to seventy-five millimeters of rain are needed for pasture growth and summer crops. "Total rainfall recorded at Gunnedah was 26mm with higher totals in the Quirindi, Spring Ridge and Premer areas."

Pastoral Conditions

Pastoral conditions are very bad; rain is needed.

Winter Cereals

Yields are excellent throughout the district. Quirindi is well above average, with 5.0 tonnes/ha the highest reported average.

Wheat

Gunnedah Shire:	Area estimate	105,000 ha
	Estimated yield	1.8 tonnes/ha
Quirindi Shire:	Area estimate	49,000 ha
	Estimated yield	2.5 tonnes/ha

Barley

Gunnedah Shire:	Area estimate	30,000 ha
	Estimated yield	1.6 tonnes/ha
Quirindi Shire:	Area estimate	5,000 ha
	Estimated yield	2.00 tonnes/ha

Summer Cereals

Sorghum (30,000 ha)

Conditions in the crop are variable. Early planted sorghum is severely stressed. Quirindi has conditions a little better than Gunnedah. Rain is needed, especially for the late crops.

Gunnedah  
December 1981 (Continued) .

Oilseeds

Sunflowers

Early planted sunflowers have less yield potential due to hot dry conditions. About 1,500 ha were planted with an expected yield of 0.5 tonne/ha. Poor price levels and dry weather could reduce the area to be planted. Before the late sunflowers can be planted, 30-50mm of rain are needed.

Soybeans

The soybean area is down 30 percent, to 1,400 ha.

Summarization of the  
New South Wales Department of Agriculture  
Western Agricultural Region  
Coonabarabran  
Monthly Crop Report  
March 1981

Seasonal Conditions

Precipitation: no rain was received.

Temperature: above average by 2°C to 5°C.

It was the typical dry start to autumn. Seasonal conditions have deteriorated rapidly. Feed has dried out. There are pockets of severe drought in areas east of Coolah, west of Dunedoo, and west of Baradine.

Pastoral Conditions

Winter annuals have died off. Dry feed is available in 70 percent of the area; drought conditions prevail in the remaining 30 percent of the district. Fresh feed is scarce.

Winter Cereals

Wheat

It is projected that 100,000 hectares will be sown.

Barley

Two hundred thousand (200,000) hectares are projected to be sown.

Triticale

Projected 3,000 hectares to be sown.

Oats

It is estimated that 30,000 hectares will be sown, with 50 percent of the area sown already. Land preparation has occurred this month with little else taking place.

Cowpeas

The 1,500-1,800 hectares of cowpeas are doing well so far.



Coonabarabran  
March 1981 (Continued)

Winter Oilseeds

No report.

Summer Oilseeds

Sunflowers

Four thousand and five hundred (4,500) hectares were planted in sunflowers; 3,000 ha sown Dec./Jan. are expected to yield 2,200 tonnes. Late sown crops will need more rain for even low yields.

Summer Cereals

Sorghum

There are many late crops, though harvest is underway. An area of 3,000 ha is expected to produce 4,000 tonnes.

Summarization of the  
New South Wales Department of Agriculture  
Western Agricultural Region  
Coonabarabran  
Monthly Crop Report  
April 1981

Seasonal Conditions

Precipitation: Isolated showers.

Temperatures: First frost April 26, temperatures generally 1°C to 3°C above average.

Pastoral Conditions

Drought conditions spread. If no rain is received by the last of May most owners will be hand feeding, now 35 percent are.

Winter Cereals

Wheat

One hundred thousand (100,000) hectares are projected to be sown, land preparations are at a standstill. There is fair subsoil moisture.

Oats

Thirty thousand (30,000) hectares are projected to be sown. The Eithteen thousand (18,000) hectares planted in Feb./March are not in good shape; some in low subsoil moisture paddocks are dead. It is getting to be too late for planting on light soil areas.

Barley

Twenty thousand (20,000) hectares are projected for this crop.

Triticale

Three thousand (3,000) hectares are projected for this crop.

Cowpeas

Yields are reduced by dry, hot weather and the frost; 1,500-1,800 hectares were sown; it is expected now that 1,000 hectares will be harvested with a projected yield of 200 tonnes.

Coonabarabran  
April 1981 (Continued)

Winter Oilseeds

No report.

Summer Oilseeds

Sunflowers

One thousand and five hundred (1,500) to two thousand hectares were harvested. Early crops yielded extremely well; late crops should be generally low yielding.

Summer Cereals

Sorghum

Harvest is complete; 4,000 tonnes were produced from 3,000 hectares.

Summarization of the  
New South Wales Department of Agriculture  
Western Agricultural Region  
Coonabarabran  
Monthly Crop Report  
May 1981

Seasonal Conditions

Precipitation:

Drought-breaking rains were received which were the first rains of the year in the hardest hit drought areas; for most of the district they were the first in 13 weeks. Some areas are now too wet for sowing.

Pastoral Conditions

Feed will be scarce; 95 percent of the oats has survived and in 10 days will be ready for grazing.

Winter Cereals

Wheat

It is still anticipated that the area will be 100,000 hectares.

Barley

It is still anticipated that the area will be 20,000 hectares.

Oats

It is still anticipated that the area will be 30,000 hectares, with 20,000 hectares sown early.

Triticale

Three thousand (3,000) hectares are anticipated to be planted to this crop.

Other Winter Crops

Lupins

Three thousand (3,000) hectares are anticipated to be planted to this crop.

The majority of the winter cereals will be sown after the wet conditions dry out (after 1 week to 3 weeks).

Coonabarabran  
May 1981 (Continued)

Winter Oilseeds

None reported.

Summer Oilseeds

Sunflowers

Early sown crops (November to mid-January planting date) produced 2,300 tonnes. Late crops will be low yielding and won't be ready for harvest for several more weeks.

Summer Cereals

No report.

Summarization of the  
New South Wales Department of Agriculture  
Western Agricultural Region  
Coonabarabran  
Monthly Crop Report  
June 1981

Seasonal Conditions

Precipitation:

Very heavy rain was received the first part of the month; the persistent showers were received throughout the rest of the month. Most areas have received 100mm to 200mm of rain since the late May break of season.

Pastoral Conditions

Pastures are slow growing but are doing better than was expected; the area could still be 15,000 hectares. Ninety-five percent of the lucerne sown was to "SAA"-resistant varieties; 85 percent of the subclovers was to Nungarian, Northam, and Seaten Park.

Winter Cereals

Forty-five percent of the wheat, barley, and triticale has been sown, also all of the lupins, and 90 percent of the oats. Part of the area was sown using fallow spraying, spraying an herbicide such as Roundup. It is estimated that 10,000 hectares were sown in this manner.

Winter Oilseeds

No report.

Summer Oilseeds

No report.

Summer Cereals

No report.

Summarization of the  
New South Wales Department of Agriculture  
Western Agricultural Region  
Coonabarabran  
Monthly Crop Report  
July 1981

Seasonal Conditions

Precipitation:

Showers were received during the month with most areas receiving over 50mm of rain. Breaks in the rain allowed sowing to be done; most sowing is complete. The wet soils have resulted in "yellowing".

Pastoral Conditions

Stock hand-feeding is easing. Pastures are now growing. It is expected that by the end of August that feed conditions will be excellent.

Winter Cereals

Wheat

One hundred thousand (100,000) hectares are projected, 95 percent sown.

Barley

Twenty thousand (20,000) hectares are projected, 95 percent sown.

Oats

Thirty thousand (30,000) hectares are projected; sowing is complete.

Triticale

Three thousand (3,000) hectares were sown, sowing is complete.

Crops had generally good emergence.

Other Winter Crops

Lupins

Two thousand and five hundred (2,500) hectares were sown; sowing is complete.

Coonabarabran  
July 1981 (Continued)

Summer Cereals and Oilseeds

Land preparation is beginning; acreage is expected to be down 10 to 20 percent.

Diseases and Pests

The worst blue oat mite problems ever encountered have occurred. There are some grubs and some "frost tipping", also low amounts of blue green aphid and "SAA".



Summarization of the  
New South Wales Department of Agriculture  
Western Agricultural Region  
Coonabarabran  
Monthly Crop Report  
August 1981

Seasonal Conditions

Precipitation:

Light rain was received during month. The first half of September has been dry. Rain is needed.

Temperature:

Temperatures for the first 10 days of September have been above average by 5°C.

Pastoral Conditions

Rain is needed; a lot of the newly sown pastures will be vulnerable without it. Pastures have died back, some in the last 2 weeks. The feed situation in the central and southern areas will be critical in the next 2-4 weeks without rain.

Winter Cereals

Wheat

One hundred thousand (100,000) hectares.

Barley

Twenty thousand (20,000) hectares.

Oats

Thirty thousand (30,000) hectares, with the area for harvest down; less than 40 percent is expected to be harvested, most will be grazed out.

Triticale

Three thousand (3,000) hectares.

Coonabarabran  
August 1981 (Continued)

Other Winter Crops

Lupins

Two thousand and five hundred (25,000) hectares.

Crops on shallow soils are regressing.

Summer Cereals and Oilseeds

A decreased area is expected; the market situation and the feed situation are at present preventing land preparations.

Diseases and Pests

Blue green aphids are on the increase.

Summarization of the  
New South Wales Department of Agriculture  
Western Agricultural Region  
Coonabarabran  
Monthly Crop Report  
September 1981

Seasonal Conditions

Precipitation:

It has been dry until September 27, then 15mm to 46mm of precipitation were received.

Temperature:

Temperatures have been above average by 3°C to 5°C.

Pastoral Conditions

Conditions are just adequate over most of the district area; however, in the north they are good. If a good rain is not received in the next few weeks, semidrought conditions will be back.

Winter Cereals

Estimated yields: Wheat:

1.2-1.7 tonnes/hectare.

Barley

1.1-1.7 tonnes/hectare.

Oats

1.2-1.5 tonnes/hectare (40 percent of the area is for harvest).

Triticale

0.8-1.3 tonnes/hectare.

Coonabarabran  
September 1981 (Continued).

Other Winter Crops

Lupins

0.5-0.75 tonne/hectare.

Subsoil moisture is limited; heading should occur in the next 3 weeks;  
rain is needed.

Summer Cereals and Oilseeds

No report.

Diseases and Pests

Blue green aphids were bad until recently when the higher temperatures  
helped the situation.

Summarization of the  
New South Wales Department of Agriculture  
Western Agricultural Region  
Coonabarabran  
Monthly Crop Report  
October 1981

Seasonal Conditions

Precipitation:

Excellent rain was received throughout the month with mild conditions.

Pastoral Conditions

Excellent feed conditions. New stands of lucerne, clover, and phalaris which were planted this season are also excellent.

Winter Cereals

Estimates: Wheat

Ninety-one thousand (91,000) ha, 1.85 tonnes/ha average.

Barley

Eighteen thousand and seven hundred (18,700) ha, 1.7 tonnes/ha average.

Oats

Thirty-six thousand (36,000) ha, 1.5 tonnes/ha average..

Triticale

Three thousand (3,000) ha, 1.5 tonnes/ha average.

Other Winter Crops

Lupins

Estimate: 2,000 ha, 0.8 tonne/ha average. Harvest is expected in the north in 2 weeks (mid-November); most areas will be later than normal.

Summer Cereals and Oilseeds

It is expected that 4,500 ha sorghum and 6,000 ha sunflowers will be sown. About 40 percent of the sorghum is sown already, but little sunflowers have been sown.

Summarization of the  
New South Wales Department of Agriculture  
Western Agricultural Region  
Coonabarabran  
Monthly Crop Report  
November 1981

Seasonal Conditions

Precipitation:

Above average rain was received with recordings of 65mm to 102mm of precipitation.

Temperature:

Temperatures were mild, warmer the last few days of November.

Pastoral Conditions

Conditions are excellent.

Winter Cereals

Estimates: Wheat

Ninety-one thousand (91,000) ha, 1.9 tonnes/ha average.

Barleys

Eighteen thousand and seven hundred (18,700) ha, 1.75 tonnes/ha average.

Oats

Thirty-six thousand (36,000) ha, 1.5 tonnes/ha average.

Triticale

Three thousand (3,000) ha, 1.6 tonnes/ha average.

Coonabarabran  
November 1981 (Continued)

Other Winter Crops

Lupins

Two thousand (2,000) ha are expected to be harvested with an average yield of 0.8 tonne/ha. Harvest is slow. The northern areas are beginning to get well underway, the majority of the district will be harvesting in 10 days. Late sown crop prospects are markedly improved.

Summer Cereals and Oilseeds

Sorghum

Four thousand and five hundred (4,500) hectares, with most sown.

Sunflowers

Six thousand (6,000) hectares, with little sown.

Diseases and Pests

Take-all and crown rot; army worms are present in some southern barley crops.

Summarization of the  
New South Wales Department of Agriculture  
Western Agricultural Region  
Coonabarabran  
Monthly Crop Report  
December 1981

Seasonal Conditions

Scattered storms and showers were received. Conditions were mostly ideal for harvest. Rain is needed for late sunflowers and for 1982 land preparations.

Pastoral Conditions

Pastoral conditions are excellent, lots of dry feed available.

Winter Cereals

Harvest is 92 percent complete. Coolah Shire has close to the record in wheat and barley yields. Coonabarabran Shire should average 1.9 tonnes/ha.

Excellent crops, with high protein and little weather damage. The lupin harvest is variable overall, with yields of 1 tonne/ha, but some have as much as 3.5 tonnes/ha. Triticale prices and yields are very favorable.

Summer Cereals and Oilseeds

Sunflower

Seventy-five percent still needs to be sown due to dry conditions in December.

Sorghum

Rain is needed in January for a 2.5 tonnes/ha yield.

Diseases and Pests

Problems are take-all and crown rot, but it amounts to less than 3 percent.



Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Monthly Crop Report  
Dubbo  
March 1981

Included in the Dubbo agronomy district are Dubbo, Gilgandra, and the western section of Wellington District.

Seasonal Conditions

Conditions are warm and very dry with occasional dust storms through the month. There are severe drought conditions through much of the district, with the south and the west the worst.

Pastoral Conditions

There is no feed in many areas. Conditions in Elong, Geurie, and Tomingley are the worst. Farmers are drought feeding.

Winter Cereals

Preparations are way behind schedule, with no activity reported. Cultivation hasn't taken place on 40 percent of the intended area. February-planted oat crops have been lost or need rain. If rains come, grazing oats and barley are expected to be sown over large areas.

Summer Cereals

Grain Sorghum

A small area will be harvested for grain; much has been grazed off. Reduced water allocations and hot conditions have brought irrigated yields below normal.

Soybeans

The crop is at the podding stage.

Cowpeas

Cowpeas are being grazed; crops for seed have good pod set.

Dubbo  
March 1981 (Continued)

Other Winter Crops

Lupins

Farmers are expected to sow a large area in April - early May weather permitting. An increase in use of simazine for broadleaf weeds is expected.

Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Monthly Crop Report  
Dubbo (Dubbo, Gilgandra, Western Wellington) District  
April 1981

Seasonal Conditions

The drought situation worsened. Patchy light rains in early April allowed some sowing. It was very dry most of month. Rain is needed.

Pastoral Conditions

Conditions are desperate at these locations: Dubbo and south to Elong, Wellington, Arthurville, and Tomingley. Farmers are fully drought feeding both sorghum stubble and soybean baled stubble. Lucerne hay production took place.

Winter Cereals

There are some irrigated oats and barley for feed. Some oats and barley planted at the beginning of April now need rain urgently. Large areas will be sown for feed if good rains come in May. Fallows were being worked. Need rain to build up moisture reserves so crops can be sown in a timely manner.

Summer Cereals and Oilseeds

Soybeans

Harvesting of a small area.

Cowpeas

Grazed. Some harvesting for seed will take place.

Fieldpeas

Some interest, maybe 200 hectares will be planted after rains, May/early June sowing.

Other Winter Crops

Lupins

Isolated sowings need rain in order to plant intended area by last of May.

Summarization of the  
New South Wales Department of Agriculture  
Western Region (Orana and Far West Planning Region)  
Monthly Crop Report  
Dubbo (Dubbo, Gilgandra, Western Wellington) District  
May 1981

Seasonal Conditions

Soaking rains were received over most of the district the last week in May; 20mm to 40mm of rain were received, followed by 30mm the first week of June.

Pastoral Conditions

Excellent winter pasture germination has occurred; there should be good feed by early mid-June. A large area expected to be planted to lucernes (aphid resistant) and subclover. Bluegreen aphids prevalent on lucerne (new) had to be sprayed.

Winter Cereals

Rains partly replenished subsoil moisture levels. Sowing conditions should be ideal through June. By the end of May, 10 percent of the wheat crop was planted. The area will be 5 percent up on last season if weather holds out. Ten percent of the barley was sown, could have a slight area increase. Considerable areas of triticale are expected. Conditions are now ideal for direct drilling and reduced cultivation techniques. Grazing oats are now providing feed. Additional oats will be sown for grain (Cassia and Coolabah varieties).

Other Winter Crops

Lupins

Sowings were in early April, early May, and some into early June. The lupin crop will have a smaller area than expected.

Summer Crops

No reports

Irrigation

Macquarie River irrigators were allocated 10 percent of their water license for the 1981/82 season.

Summarization of the  
New South Wales Department of Agriculture  
Western Division (Orana and Far West Planning Region)  
Monthly Crop Report  
Dubbo (Dubbo, Gilgandra, and Western Wellington) District  
July 1981

No report available for June 1981.

Seasonal Conditions

It was mainly dry the first half of the month, allowing most remaining cereals to be planted. Very wet the second half of July - 80mm to 125mm over most of district.

Winter Cereals

Wheat

Ninety-five percent of the intended sowings were planted by the end of July. Wet conditions caused considerable loss of late sown crops in northern areas, Gilgandra and Armadale Districts. The crop is at the just-emerged to early-tillering stage - overall good prospects. Spraying for blue oat mite (plague proportions) is occurring on heavy soils. Some wheat will be sown into early August on heavy soils, but alternate crops are being considered on wet paddocks.

Barley

One thousand and six hundred (1,600) ha sown, some planting into August.

Oats

Grazing of early-sown crop.

Triticale

Four thousand (4,000) ha sown, mainly on sandy acid soil.

Summer Cereals

Grain Sorghum

Dryland area sowings to increase.

Dubbo  
July 1981 (Continued)

Summer Oilseeds

Linseed

Two hundred and fifty (250) ha only, sown.

Safflower

If soils dry out, several thousand hectares will be planted in August.

Sunflower

Birds are a problem, though there is some interest in sunflowers.

Other Winter Crops

Lupins

One thousand and five hundred (1,500) ha were sown, with good early sown crops. The majority were sown. Semiwater logged conditions withstood well. It is the flowering stage for the variety unicolor.

Summarization of the  
New South Wales Department of Agriculture  
Orana and Far Western Region  
Monthly Crop Report  
Dubbo (Dubbo, Gilgandra, and Western Wellington) District  
August 1981

Seasonal Conditions

Cool to cold conditions, dry, with a few showers late in the month.

Pastoral Conditions

Pastures began to grow this month. Barley grass is beginning to head. Newly sown pasture establishment is good. The aphid problem will require September spraying.

Winter Cereals

Wheat

One hundred and ten thousand (110,000) hectares sown in Gilgandra and Dubbo Shires, mostly in June and July. Isolated sowing until mid-August on waterlogged July rains areas.

Early to late tillering stage. Spraying for broadleaf weeds. Nitrogen deficiency in many light soils.

Barley

Sixteen thousand (16,000) hectares sown, extending into August. Scald disease widespread; aluminum toxicity on sandy acid soils is evident.

Oats

Grazing stopped on early sown crops so crop can be harvested for grain.

Triticale

Four thousand (4,000) hectares sown.

Summer Cereals

No report.

Dubbo  
August 1981 (Continued)

Summer Oilseeds

Linseed

One hundred and eighty (180) ha were planted. The crop is in the early bud stage and is progressing well.

Rapeseed

Thirty-six (36) ha late sown; the crop is in the rozette stage.

Safflower

Some sown last half of August, further plantings during September are anticipated.

Other Winter Crops

Lupins

One thousand and five hundred (1,500) hectares, late sown areas need September rains. Good progression in crop.



Summarization of the  
New South Wales Department of Agriculture  
Orana and Far Western Region  
Monthly Crop Report  
Dubbo (Dubbo, Gilgandra, and Western Wellington) District  
September 1981

Seasonal Conditions

Very warm, mostly dry, with a rapid deterioration in crop and pasture prospects. Rain during the last week of September amounted to 8mm to 10mm; on October 3, rain in amount of 20mm to 25mm saved the crop.

Pastoral Conditions

Rapid drying off of pastures. Medic growth is seriously retarded by moisture stress and blue green aphids. Haymaking has started.

Winter Cereals

Wheat

Crops are at the peeping to flowering stage. Only average yield prospects; need October rain. Moisture stress in late September prevented broadleaf weed sprayings. Haymaking began. Some "drought tipping" evident.

Barley

One thousand and six hundred (1,600) hectares, average prospects.

Oats

A higher percentage harvested for grain is expected.

Triticale

Four thousand (4,000) ha sown; withstood harsh conditions well; flowering to early grain fill stage.

Summer Oilseeds

Safflower

Eight hundred to one thousand (800-1,000) ha sown, benefited from rains.

Dubbo  
September 1981 (Continued)

Pease seed

Thirty-six (36) ha sown, in flowering stage, heliothis problems.

Linseed

One hundred and eighty (180) ha sown, flowering stage, heliothis problems.

Other Crops

Lupins

Good pod set in early sown crops. Hot conditions affected flowers in late crops; the yield prospect is variable. There are heliothis problems.

Cowpeas

Increased sowings are expected, but seed supplies are low.

Summarization of the  
New South Wales Department of Agriculture  
Orana and Far Western Region  
Monthly Crop Report  
Dubbo (Dubbo, Gilgandra, and Western Wellington) District  
October 1981

Seasonal Conditions

Excellent rain was received during October, with amounts of 50mm to 75mm in most parts of the district. Temperatures were mild. Crop prospects are above average.

Pastoral Conditions

Pastoral conditions are good. Haymaking at full swing; there were some rain-induced losses. Serradella has responded to the rains.

Winter Cereals

Wheat

The wheat crop benefited from rains and mild weather. The late crops are filling. West of Dubbo and Gilgandra, crops are turning quickly. Crown rot problems are bad this year. There is Rutherglen bug infestation in some crops. The direct drill and no till crops look as good as conventional. Large areas were fallowed on the October rain.

Barley

Barley is turning rapidly, with average yields expected. A high proportion should qualify for malting.

Oats

Some harvesting is taking place, late crops are filling well. There is a greater than normal area being harvested for grain.

Triticale

Four thousand (4,000) ha of triticale are finishing well, and turning quickly.

Dubbo  
October 1981 (Continued)

Summer Cereals

Grain Sorghum

Above average dryland sowings were made. Sowing will continue through November. There was spraying of Rutherglen bugs.

Summer Oilseeds

Safflower

Crops are in the bud stage; they responded to the rain. Spraying is occurring for Rutherglen bug control.

Linseed

Two hundred (200) ha were planted; the crop is in the boll fill stage. There was spraying for heliothis.

Cowpeas

A large area was sown for forage in October. There were some losses due to cut worm. "Significant areas of Dolichos have also been sown."

Other Winter Crops

Lupins

Isolated cases of badly moisture-stressed lupins did not recover with the rain; however, most areas responded well to the rain. Some disease is present. Spraying for heliothis is widespread.

Summarization of the  
New South Wales Department of Agriculture  
Orana and Far Western Region  
Monthly Crop Report  
Dubbo (Dubbo, Gilgandra and Western Wellington) District  
November 1981

Seasonal Conditions

Good falls of rain were received during November, benefiting late sown cereals and summer crops. Mild temperatures delayed ripening. The full scale harvest was delayed until the end of November.

Pastoral Conditions

Pastoral conditions are good. Most hay was made by the end of November. Lucerne is growing well.

Winter Cereals

Wheat

Full scale harvest didn't start until the last week of November. Cool damp weather and green heads caused the delay. Fallowing operations continued during November. Earlier harvested crops suffered weather damage.

Barley

Harvest began mid-month, there were frequent weather delays.

Oats

Intermittent harvesting, since early November; the majority will be retained on farm.

Triticale

Harvest began in late November; 4,000 ha are expected to be harvested.

Summer Cereals

Grain Sorghum

Sowing continued through November. There has been good growth.

Dubbo  
November 1981 (Continued)

Summer Oilseeds

Safflower

The crop is in the flowering to early seed set stage. Rutherglen bugs are a problem.

Sunflower

Sunflowers are in the flowering stage for early sown, and the budding stage for late sown. Rutherglen Bugs are a problem.

Cowpeas

Large areas were sown through November, mainly for forage. Spraying for cutworm is taking place.

Other Winter Crops

Linseed

Harvest is expected early, mid-December.

Lupins

Yield is below expectations.

Summarization of the  
New South Wales Department of Agriculture  
Orana and Far Western Region  
Dubbo (Dubbo, Gilgandra, and Western Wellington) District  
Monthly Crop Report  
December 1981

Seasonal Conditions

Warm to hot conditions and dry through December allowed harvest of most winter cereals by Christmas. Slightly above normal district averages were obtained.

Pastoral Conditions

Pastures have dried off but there is adequate dry feed and some lucerne growth. Grazing of stubble is taking place.

Winter Cereals

Wheat

Harvest for the most part was complete by Christmas. Dubbo average yields were 1.4 tonnes/ha, and average yields for Gilgandra were 1.5 tonnes/ha. Grain quality is mostly good. Crown rot was a major problem on heavy soils, particularly with the variety Songlen.

Barley

Disappointing yields; most were received as feed grain due to high protein levels. Prices were also disappointing.

Oats

Average yielding, good crops, with most kept on farm.

Triticale

Triticale outyielded wheat and barley on acid sandy soils; good prices were obtained for the crop.

Summer Cereals

Grain Sorghum

Two thousand and five hundred to three thousand (2,500-3,000) ha were sown. Further January sowings with rain are expected.

Dubbo  
December 1981 (Continued)

Summer Oilseeds and Summer Crops

Safflower

The crop is at the grain fill stage. Rutherglen bugs are a problem.  
Harvest is due the first half of January.

Sunflower

Early sown crops are at the seed setting stage, late sown are flowering.  
Rutherglen bugs are a problem.

Cowpeas

Cowpeas are making good progress, though rain is needed. Some grazing is taking place.

Other Winter Crops

Lupins

Harvest is complete. Yields ranged from 0.5 to 1.5 tonnes/ha, with an average of 0.8 tonne/ha.



Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
March 1981

Seasonal Conditions

No beneficial rain was received and temperatures are hot. The entire district was drought declared. Rain in amounts of 75mm to 100mm is needed just to germinate pastures. Dryland prospects look bleak; irrigators need very heavy rain to have water in the catchment areas.

Pastoral Conditions

Conditions are terrible for dryland. Heavy rain is needed to germinate, then more rain for pasture consolidation.

Winter Cereals

Presently, fallows have no subsoil moisture.

Summer Cereals

Grain Sorghum

Four hundred (400) ha will be harvested. Harvesting began the last half of March.

Summer Oilseeds

Soybeans

One thousand (1,000) ha will be harvested; it should begin in late April; the estimated yield is 1.8 tonnes/hectare.

Sunflowers

Five hundred (500) ha are expected to be harvested, with yields ranging from 0.6 tonne/ha to 2.2 tonnes/ha and with an average of 1.25 tonnes/ha.

Fiber Crops

Cotton

Nine thousand and seven hundred (9,700) ha will be harvested; harvest began in late March, interrupted by showers.

Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
April 1981

Seasonal Conditions

Dry conditions existed during April with no beneficial rain received. Very bleak outlook for dryland and irrigated cropping and pastoral conditions for the 1981-82 season. Temperatures have been warm with nights mild. Heavy rain is needed.

Pastoral Conditions

Pastoral conditions deteriorated. Farmers are hand-feeding.

Winter Cereals

There is no subsoil moisture, prospects are bleak. Small areas of irrigated oats were planted for grazing.

Summer Cereals

Grain Sorghum

Harvest is complete. Disappointing yields due to reduced water allocations for the 1980-81 season.

Summer Oilseeds

Soybeans

One thousand (1,000) ha are expected to be harvested by the end of April; harvest is underway, with yields of 2-3 tonnes/ha. There are problems with uneven ripening (ripe pods, with stems still green).

Sunflowers

Harvest is complete.

Warren  
April 1981 (Continued)

Fiber Crops

Cotton

Nine thousand and seven hundred (9,700) ha are expected to be harvested; yields are better than estimated. First pick is 50 percent complete. There is some regrowth, slow defoliation, and boll opening of very good quality.

Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
May 1981

Seasonal Conditions

Good general soaking rains were received in late May providing relief from drought conditions. Temperatures were mild.

Pastoral Conditions

Rains germinated dryland pastures; conditions were adequate for establishment.

Winter Cereals

Dryland wheat farmers have 30mm to 45mm of subsoil moisture. Planting is expected to begin the first half of June. If follow-up rain comes, most areas will need to be reworked or sprayed with an herbicide before planting.

Early oats and barley responded well and will provide grazing in mid- to late-winter.

Other Winter Crops

Lupins

No reports of planting in the district.

Winter Oilseeds

Rapeseed

No reported plantings.

Fiber Crops

Cotton

Eighty five percent of the area was first picked. Rain caused a lowering of quality.

Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
June 1981

Seasonal Conditions

Good soaking rain improved pastures and dryland farming conditions. There is enough subsoil moisture for crop establishment. Cold temperatures were encountered this month.

Pastoral Conditions

Pastoral conditions are good. There are large areas of dryland lucerne, jemalong snail medic, and nungarin subclover planted this season.

Winter Cereals

Wheat

One hundred and sixty thousand (160,000) ha are expected to be planted in Warren and Narromine Shires, with 80 percent completed by the first week of July. A few problems exist, but generally good establishment. There were grassy weed transplant problems, 10 percent of the fields could have been fallow-sprayed with an herbicide before sowing. Pre-emergent herbicides are more widely accepted this season.

Oats

Good feed from early-sown oat crops are available.

Barley

Farmers are 80 percent complete in planting, with good feed available from early-planted barley.

Other Winter Crops

Lupins

Two hundred and forty 240 ha were planted.

Warren  
June 1981 (Continued)

Winter Oilseeds

Linseed

No plantings.

Rapeseed

No plantings.

Safflower

Little dryland interest as a wheat alternative. Some will probably be planted dryland on irrigation country.

Fiber Crops

Cotton

About 87 percent harvested. Rain in May and June interfered with harvest of the first and second pick.

Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
July 1981

Seasonal Conditions

Heavy soaking rains and cold wet conditions interrupted land preparation for summer crops. Wet conditions however have guaranteed an almost full water allocation for irrigation.

Pastoral Conditions

Pastoral conditions are excellent, although aphids are beginning to build up populations.

Winter Cereals

Wheat

One hundred and sixty thousand (160,000) ha were late planted in the shires of Warren and Narromine, due to a late break in season and follow-up rain; then germination was delayed due to cold wet conditions. There are heavy earth mite infestations. Broad leaf and grass weeds are a problem; early post-emergence spraying has been done. Yellow leaf spot is present on older wheat leaves in stubble areas.

Oats

Twelve thousand (12,000) to 15,000 ha were planted; grazing of the early crops is taking place.

Barley

Twenty-two thousand (22,000) to 27,000 ha were planted with some of the early sown being grazed.

Triticale

One thousand (1,000) ha were planted.

Warren  
July 1981 (Continued)

Other Winter Crops

Lupins

Two hundred and forty (240) ha were planted.

Winter Oilseeds

Linseed and rapeseed

No reported plantings.

Safflower

Two thousand (2,000) ha are expected to be planted.

Summer Oilseeds

Soybeans

Seven thousand (7,000) ha plus are expected to be sown.

Sunflowers

One thousand (1,000) ha plus are expected to be sown.

Fiber Crops

Cotton

Eleven thousand (11,000) ha plus are expected to be planted.



Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
August 1981

Seasonal Conditions

Light rain fell throughout the district. Temperatures were cool to mild.

Pastoral Conditions

Pastoral conditions are excellent; adequate feed should be available through spring and early summer. There was a big increase in lucerne acreage. Aphids have been a problem.

Winter Cereals

Wheat

Dryland farmers need good rain in September for yields. 170,000 ha are expected to be harvested. Growth is at the boot stage for the more advanced crops; others (most) are in the late-tillering to early-jointing stages. Early moisture stress is present in crops.

Oats

~12,000 to 15,000 ha planted.

Barley

~22,000 to 27,000 ha planted.

Triticale

One thousand (1,000) ha planted.

Winter Oilseeds

Linseed and rapeseed

No planting.

Safflower

~2,000 ha planted.

Warren  
August 1981 (Continued)

Other Winter Crops

Lupins

~240 ha planted.

Summer Cereals

Grain sorghum

Limited interest

Maize

Limited interest

Summer Oilseeds

Soybeans

Up to 9,000 ha could be sown, with a large area double-cropped following wheat.

Sunflowers

An estimated 1,000 ha will be planted.

Fiber Crops

Cotton

~11,500 ha will be planted beginning 9/21/81.

Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
September 1981

Seasonal Conditions

Light rain received throughout the district during September did not benefit dryland wheat farmers or graziers. Rain (50mm to 75mm) is needed to guarantee even medium yields. The weather was warm to hot with cool nights.

Pastoral Conditions

Conditions are still good. Barley grass "hayed off" rapidly and is now causing problems for sheep and lambs. Aphids are in plague proportions in lucerne.

Winter Cereals

Wheat

~170,000 ha were planted. Very poor yield prospects as all crops urgently need rain for just a 1.1 tonne/ha district average.

Oats

~12,000 to 15,000 ha were planted.

Barley

~22,000 to 27,000 ha were planted.

Triticale

~1,000 ha were planted.

Winter Oilseeds

No linseed or rapeseed.

Safflower

Looks like 1,500 ha, not 2,000 ha, were planted. The crop is progressing reasonably well.

Warren  
September 1981 (Continued)

Other Winter Crops

Lupins

Two hundred and forty (240) ha were planted this season.

Summer Oilseeds

Soybeans

Final area will depend on:

1. Water for irrigation after wheat is irrigated
2. Double-cropping

Six thousand (6,000) ha are reasonable and 9,000 ha are achievable if time and water are available.

Sunflowers

~1,000 ha will be planted. Planting has not started.

Fiber Crops

Cotton

Nine thousand and four hundred (9,400) ha, not 11,500 ha, now expected. Planting started mid-September, then was interrupted by cold weather and began again late September and early October. The problem has been rapid drying of the seedbeds.

Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
October 1981

Seasonal Conditions

Good soaking rains were received throughout the district during October, improving the dryland wheat prospects to an average yield of 1.3 to 1.4 tonnes/ha.

Pastoral Conditions

Pastoral conditions are good. The summer grasses have germinated, and establishment should be guaranteed by the early November rains. The conditions should be quite good through early summer.

Winter Cereals

Wheat

~170,000 ha will be harvested. Yield prospects have again improved to average between 1.3 to 1.4 tonnes/ha. Early planted crops have some drought tipping. Some mottling is present due to the early November rain. Harvest should begin the last week of November.

Barley

~27,000 ha will be harvested; it began the last half of October.

Oats

~17,000 ha will be harvested; it began last half of October.

Triticale

~1,000 ha will be harvested.

Winter Oilseeds

No linseed or rapeseed.

Safflower

~1,500 ha will be harvested. The rain improved prospects.

Warren  
October 1981 (Continued)

Other Winter Crops

Lupins

Two hundred and forty (240) ha will be harvested.

Summer Cereals

Grain Sorghum

Planting began in late October. The final area may be less than 2000 ha.

Summer Oilseeds

Sunflowers

One thousand (1,000) ha will be sown, planting has begun.

Soybeans

There could be less than 5,000 ha planted this season. Sowing will start following the early November rain (a little earlier than usual), giving farmers the opportunity of completing the sowing of soybeans before beginning to harvest wheat.

Fiber Crops

Cotton

~9,120 hectares have been sown. Since germination and early development, soil temperatures have dropped due to cool rainy conditions, and development has slowed. North of Warren, an area of cotton was severely damaged by a localized hailstorm.

Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
November 1981

Seasonal Conditions

Up to 88mm of rain was received during November, which caused weather damage and delayed the wheat harvest. Cold temperatures during November adversely affected the growth and development of cotton and the germination of grain sorghum.

Pastoral Conditions

Conditions are good with the exception of the area south of Warren adjoining the Bogan River; this area has been poor for some time.

Winter Cereals

Wheat

~170,000 ha will be harvested, with an estimated yield of 1.4 tonnes/hectare. Harvest began mid-November. By November 4, 27 percent of the harvest had been delivered. Crown rot has been a problem.

Oats

~17,000 ha will be harvested. Harvest began early November, then was delayed by rain.

Barley

~27,000 ha will be harvested, very little so far has been harvested; the rain has caused regrowth.

Triticale

~1,000 ha will be harvested; harvesting has just begun.

Rye

A small area will be harvested.

Warren  
November 1981 (Continued)

Other Winter Crops

Lupins

~240 ha will be harvested. Harvest has begun, with yields of 0.8 to 1.5 tonnes/hectare.

Summer Crops

Grain Sorghum

~2,000 ha will be sown. Cold wet conditions after sowing resulted in poor germination and many fields needed replanting.

Summer Oilseeds

Soybeans

~5,000 ha will be planted; planting began following the November rain; most though will be planted in December.

Sunflowers

~1,000 ha will be planted.

Winter Oilseeds

Safflower

~1,500 ha will be harvested. Crop is flowering and filling. Rutherglen bug is a problem as are weeds. Yields could be 0.8 tonne/hectare.

Fiber Crops

Cotton

~9,120 ha were planted, with 5 percent replanted. Cold weather affected growth and development, but by the end of the month prospects were better due to warmer conditions. Insects were a problem and there were some problems with bacterial blight.



Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
December 1981

Seasonal Conditions

Dry ideal harvest conditions occurred with hot temperatures. Harvest was completed. Conditions were also ideal for the growth and development of irrigated summer crops.

Pastoral Conditions

Conditions are adequate except in the south in both Warren and Narromine Shires adjoining the Bogan River.

Winter Cereals

Wheat

~170,000 hectares were harvested with yields from 1.3 to 1.4 tonnes/hectare.

Summer Grain

Two thousand (2,000) hectares are expected to be planted. Germination and establishment are expected to be a problem.

Summer Oilseeds

Soybeans

~5,000 hectares are expected to be sown; sowing will continue through December.

Sunflowers

~1,000 ha of sunflowers were sown; development ranges up to flowering.

Winter Oilseeds

Safflower

~1,500 ha will be harvested, beginning the end of December.

Warren  
December 1981 (Continued)

Fiber Crops

Cotton

Nine thousand and nine hundred (9,900) ha were planted. Hot weather was ideal for growth; first squares occurred towards the end of December. First irrigation occurred mid-December on red soils, and should occur on the heavy soils in late December to early January. Insect problems (heliiothis) were encountered.

Summarization of the  
New South Wales Department of Agriculture  
Warren District  
Monthly Crop Report  
Warren  
January 1982

Seasonal Conditions

Moderate to heavy falls were received throughout the district. There was isolated damage due to the rain. Temperatures for the month were very hot.

Pastoral Conditions

Pastoral conditions were improved by the rains.

Winter Cereals

Fallowing is underway. Subsoil moisture has improved.

Winter Oilseeds

Safflower

One thousand and five hundred (1,500) ha were harvested. Harvest was complete mid-January with yields ranging from 0.5 to 1.2 tonnes per hectare.

Summer Grain

Grain Sorghum

~2,000 ha were planted. The advanced crops are filling.

Summer Oilseeds

Soybeans

~5,000 ha were sown. Early sown crops are flowering. A large area was late planted and will need irrigation for maximum yields.

Sunflowers

~1,000 ha were planted. Development ranges from the "bud" stage to 3 weeks before harvest.

Warren  
January 1982 (Continued)

Fiber Crops

Cotton

Nine thousand and nine hundred (9,900) ha were planted. Hot weather conditions ideal for development were encountered. The second irrigation took place. Heliothis damage delayed maturity by up to 3 weeks. Rain also has caused development problems in some areas.

Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
March 1981

Seasonal Conditions

Extremely dry conditions were encountered this month except for a very light rain around Bellata (2mm-5mm) and a couple of localized rainfalls.

Pastoral Conditions

Feed rapidly disappeared; it dried off.

Winter Cereals

Land preparation is slow due to dry conditions; the only activity is on summer crop areas to be sown to cereals.

Summer Cereals

Four thousand (4,000) hectares of grain sorghum are harvestable. Two thousand and five hundred (2,500) hectares have already been harvested with the average yield 1.0 tonne/hectare.

Late crops have more severe drought conditions than the earlier crops.

Summer Oilseeds

Sunflowers (5,000 ha)

Late crops (irrigated) are just past mid-flowering; the estimated yield is 0.5 tonne/hectare; there is some bird damage.

Soybeans (2,500 ha)

Early crops have changed color. The last irrigation is now in progress. Crops that haven't changed color will need additional rain to boost soil moisture.

Mung Beans

The crop harvested in late March has "disease" symptoms.

Narrabri  
March 1981 (Continued)

Fiber Crop

Cotton

Picking of cotton began in mid-February on early maturing rain-grown (dryland) crops.

Irrigated cotton crops will be defoliated the second week in April. New machinery is being used this year.

Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
April 1981

Seasonal Conditions

There were thunderstorms (heavy rain and hail) in the southeastern half of the district, but most western district areas have remained dry with only half the annual average received in the last 12 months.

Pastoral Conditions

Paddocks and stock routes are extremely bare. The last of the dryfeed is now being used.

Winter Cereals

There is very little activity due to weather conditions. A few fields have had fertilizer and herbicides applied to get ready for planting. With irrigation, early oats are doing well and will provide much needed grazing.

Summer Cereals

Grain Sorghum

Late irrigated sorghum is filling well. These crops will not be harvested until late May. The district average sorghum yield will be 1.0 tonne/ha; these crops may make 3.0 tonnes/hectare.

Summer Oilseeds

Sunflowers

Late crops near maturity should be harvested in May. There is minor heliothis damage.

Soybeans

The crops are maturing; harvest begins in May. The estimated average yield is 2.0 tonnes/ha.

Narrabri  
April 1981 (Continued)

Mung Beans

The "disease problem" is physiological in nature; during the dry season excessive sugar is produced to increase osmotic pressure, and at maturity this sugar exudes.

Guar

These are experimental crops on spray irrigation.

Fiber Crops

Cotton

Picking of cotton peaked during April; it is 70 percent complete. There were insect problems until the crop was defoliated. Ginning started April 1.



Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
May 1981

Seasonal Conditions

Excellent rains over the entire Narrabri District were received this month. They were widespread, soaking, and timely for the planting of the winter cereal crop.

Pastoral Conditions

There was no growth until the rain came. Short winter species are giving growth now. There is considerable interest in undersowing the wheat crop with lucerne.

Winter Cereals

Wheat

Sowing should start as soon as soils can be tractable - 180,000 hectares to be sown.

Oats

Two thousand (2,000) hectares sown on limited rainfall, struggle for moisture. Further 10,000 hectares now could be sown on the recent rains.

Barley

Grazing barley has been sown. Malting barley to be sown. Expected barley area is 10,000 hectares.

Summer Cereals

Grain Sorghum

Harvest was held up by rain. A little flag frosting occurred. Four thousand (4,000) ha expected to average 1.0 tonne/ha.

Narrabri  
May 1981 (Continued)

Summer Oilseeds

Sunflowers

Only 1,000 hectares were harvested. Late crops still to be harvested, expected yield of 0.5 tonne/ha.

Soybeans

Two thousand and five hundred (2,500) ha; harvest continues; yields estimated at 2.0 tonnes/ha. Receivals locally down 50 percent from previous year.

Guar

Experimental; 10 ha; harvested early May.

Fiber Crops

Cotton

The first pick of cotton was completed in May; the rain caused lower quality. The second pick reached only 50 percent of anticipated area. Land preparation is underway for the 1981-82 crop. Nitrogen will be applied to 10,000 ha.

Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
June 1981

Seasonal Conditions

Good soaking rains were received during the first half of June, and during the last of the month, ground operations started. Sowing started on the 18th but was interrupted by rain.

Pastoral Conditions

Good winter species growth: medics, barley grass, rye grass, and canary grass. Wild oats are providing feed. Newly sown lucerne is in good condition.

Winter Cereals

Chemical treatment of fallow using Roundup was used on about 32,000 hectares. Three thousand (3,000) hectares have been treated using Gramoxone and other chemicals. Seventy percent of the cereals sown were with chemical weed control.

Wheat

Two tries at sowing, delayed by rain. About 25 percent (45,000 hectares) has been planted.

Oats

Since sowing has been delayed, it is expected that only 7,000 hectares will be planted. Barley and triticale are being sown instead.

Barley

Sowing is continuing; July sowing is still possible for some varieties.

Triticale

Preliminary estimate of 6,000 hectares could be sown.

Narrabri  
June 1981 (Continued)

Summer Cereals

Grain sorghum

Too wet for harvesting the last of it; also bird damage and decreasing prices are reducing profits in these last crops.

Soybeans

Too wet for harvesting the last of it.

Fiber Crops

Cotton

As soon as it dries out, a few crops will be harvested. The 1981-82 land preparation continues.

Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
July 1981

Seasonal Conditions

Rainfall kept soil moisture levels near capacity, making land preparation difficult for resowing and spraying. Considerable runoff filled creeks and scoured slopes. There were warm days and cool nights, with frosts on 10 occasions

Pastoral Conditions

Good feed is being provided from medics, rye grass, barley grass. Some serradella germination is occurring from this year and last year's planting.

Winter Cereals

Wheat

Sowing continued; an estimated 195,000 hectares were sown, more than previous estimates. Five thousand (5,000) hectares had to be resown due to rain. Large areas have been sprayed in July for wild oats. Broad leaf weeds will be sprayed in August.

Oats

Seven thousand (7,000) hectares were sown; there is grazing of oats.

Barley

Ten thousand (10,000) hectares were sown; a small area will be sown late.

Triticale

The new area estimate is 2,500 hectares; all have been sown. The areas sown by each grower have been small.

Summer Oilseeds

Sunflowers

Due to ideal soil moisture and trials, there has been some interest in sowing sunflowers in late August instead of some of the winter cereals.

Narrabri  
July 1981 (Continued)

Safflower

Favorable sowing conditions existed; 100 ha were sown.

Fiber Crops

Cotton

Land preparations and fertilizer applications are being made. Anhydrous ammonia is being applied to the soil now; and to the remaining 50 percent of the crops, anhydrous ammonia will be applied as a side dressing.

Preirrigation has taken place.

Diseases and Pests

Blue oat mites (red-legged earth mites) are in pasture and cereal fields, also pasture day moth larvae; spraying has been done.

Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
August 1981

Seasonal Conditions

Little rain was received during August. Temperatures fluctuated greatly. There were 10 ground frosts and 8 air frosts.

Pastoral Conditions

No report.

Winter Cereals

Wheat

Growth on black soils is good, but the red soils are moisture depleted. Crops on continuously cropped land without adequate fertilizer have a marked reduction in growth. Earlier crops are jointing. There are some problems with yellow leaf spot, zinc deficiency, and frosting.

Barley

Lighter soils are running short on moisture. There are some problems; yellow dwarf and zinc deficiency may be the cause.

Summer Cereals

No report.

Summer Oilseeds

Sunflowers

Early sowing began the last few days of August. There is reasonable soil moisture.

Fiber Crops

No report.

Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
September 1981

Seasonal Conditions

Hot summer weather prevailed in early September, with an average maximum temperature of 24.9°C and an average minimum of 8.3°C which is above average. There were three to four rainy days in the district; the rain was general but light. After mid-September, spring weather prevailed again.

Pastoral Conditions

Native pastures supplied good feed, even as they dried out towards late September. Oats and vetch (winter fodder crops) have had limited moisture but were able to provide stock-needed feed. Irrigated summer forage (sorghum) is being sown for feed.

Winter Cereals

Wheat

Wheat is under severe moisture stress due to limited rainfall in August and September, with sudden hot weather conditions. Crops that flowered encountered harsh conditions resulting in little grain in the heads. Grazing has begun on failed crops. Some failed crops will be cut for hay; so far 40,000 to 50,000 hectares (out of 195,000 ha) aren't worth harvesting.

Oats, Barley, and Triticale

Some crops headed early. Later crops suffered severe stress.

Lupins (150 hectares)

Late sown lupins are flowering and are of reasonable size. Small quantities of grain will be harvested.



Narrabri  
September 1981 (Continued)

Summer Cereals

Grain Sorghum

50mm or more of rain is needed for planting, but 100mm of rain would be preferred.

Summer Oilseeds

Sunflowers

Five hundred (500) hectares were planted. Early sunflower crops were planted to the end of September. The dryland crops need rain.

Soybeans

Two thousand (2,000) hectares are planned due to limited water allocations; none have been planted yet.

Fiber Crops

Cotton

Two thousand and three hundred (2,300) hectares are expected. Planting started the last week of September on preirrigation areas; emergence occurred the last few days of September. Mid-October should be the peak sowing period without preirrigation. The crop will then be irrigated. There is a 2 megalitres (ML) water allocation.

Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
October 1981

Seasonal Conditions

General rains in late September continued through October. Drought conditions have been broken. Temperatures were mild to warm, with a large variability. There was slight crop damage in small patches from hail.

Pastoral Conditions

Dry feed is abundant from native medics and grasses. Summer grasses and forages are growing well. Vetch is providing good green feed.

Winter Cereals

Wheat

Yield on late maturing crops is up to 1.3 tonnes/ha average. Late crops escaped the severe damage done to early crops. Temperatures were cooler, and soil moisture has been maintained. Harvesting is expected the second week in November.

Oats

Favorable yields were obtained on some grain crops due to September rains. Harvest began for early crops late October, with up to 1.9 tonnes/ha yields.

Barley

Harvest began for early barley crops. Later maturing crops should give better yields.

Summer Cereals

Grain Sorghum

Four thousand (4,000) ha (approximately) have been planted, about half of the expected crop. Early sown (mid-October) crops established well.

Narrabri  
October 1981 (Continued)

Summer Oilseeds

Sunflowers

One thousand (1,000) ha of early sown sunflowers are doing well on plenty of moisture. The crop is forming buds and has a height 30 cm to 60 cm.

Safflower

One crop was hail damaged in early October.

Fiber Crops

Cotton

An estimated 24,500-ha area is expected. Rainfall allowed further watering; irrigation allocations have been increased. Sowing continued with 7 percent left to be planted.

Dryland Cotton

Included in the 24,500 ha are 200 ha of dryland cotton that have been planted and 100 ha that will be planted in November. The variety Deltapine 61 was planted on 100 cm rows at 8 kg/ha. Small plots with varying row widths are expected.

Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
November 1981

Seasonal Conditions

The weather was warm to hot with frequent thunderstorms. The average maximum temperature was 26.8°C, with an average minimum of 14.3°C. Rainfall was variable in the district.

Pastoral Conditions

No report.

Winter Cereals

Wheat

Harvest began in mid-November and was interrupted by rain. A delayed harvest resulted due to subsequent weed growth and secondary late tillering. More than 30 percent of the harvest had starch damage; other damage was black tip and mold. Durum wheat crops are less affected; deliveries were made at Bellata, Edgeroi, and Boggabri.

Oats

Harvest began; yields were variable with the average at 0.8 tonne/ha.

Barley

Late barley crops have similar damage as wheat. Lodging and black tipping were common.

Summer Cereals

Grain Sorghum

The early crops are heading. Some crops are thin and patchy due to rain after sowing. Aphids are a problem. Irrigation water was raised to 55 percent of allocation.

Narrabri  
November 1981 (Continued)

Summer Oilseeds

Safflower

Early safflowers are at the end of the flowering stage.

Fiber Crops

Cotton

Twenty four thousand and five hundred (24,500) hectares were planted. Only a few crops were resown due to cold conditions in late October and early November. The first irrigation occurred on red soils. Insect (thrip) damage occurred; farmers sprayed for it. A small amount of bacterial blight was reported.

Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
December 1981

Seasonal Conditions

Conditions were hot except during Christmas with the highest maximums of 40°C at Myall Vale and 43°C at Narrabri West. The average maximum was 34.8°C, and the average minimum was 19.2°C at Myall Vale. Thunderstorms occurred, but annual totals are well below average.

Pastoral Conditions

None Reported.

Winter Cereals

Wheat

Rain delayed harvest, but many crops were harvested by Christmas. Receivals have been only 60 percent of that delivered in a "good year".

Triticale

Late maturing crops are still to be harvested. Yields were variable with some a disappointment.

Lupins

Lupins were harvested in November and December; the better yields were greater than 1 tonne/ha. There were some grain shattering losses and hail damage.

Summer Cereals

Grain Sorghum

Sorghum was heading and flowering. There was slight heliothis damage in early December. Growers are showing some interest in late sown sorghum, but the risk is high due to the chance of limited rainfall.

Narrabri  
December 1981 (Continued)

Summer Oilseeds

Safflower

Early crops are near maturity. Harvest is expected in early January (estimated).

Sunflowers

If rain is received in late January, sunflowers could be sown. Early crops are flowering and may have a reasonable yield.

Summarization of the  
New South Wales Department of Agriculture  
Narrabri District  
Monthly Crop Report  
January 1982

Seasonal Conditions

The weather was characterized by warm days, warm nights, strong winds, and thunderstorms. Variable rainfall was received from a few mm to 169.6mm at Wee Waa. Considerable damage was done by wind in some areas.

Pastoral Conditions

None reported.

Winter Cereals

Wheat

Harvest was completed early in January. An estimated average yield of 1.3 tonnes/ha was received from 145,000 harvested hectares.

Barley

An average yield of 0.9 tonne/ha. was obtained. There was a wide range in protein level. Clipper had a 16 percent level.

Summer Cereals

Sorghum

Two thousand (2,000) hectares were sown in January, bringing the total to 8,000 hectares. Early sown crops were flowering and filling in late January. Damage due to hot drying winds was common.

Mung Beans

One hundred (100) hectares were sown in January; some of this was resown in late January.

Cowpeas

Small areas were sown.



Narrabri  
January 1982 (Continued)

Summer Oilseeds

Safflower

Three hundred fifty (350) hectares were planted in safflower; the crop was harvested in January; yields varied from 0.2 tonne/hectare to 1.3 tonnes/hectare in irrigated areas. Some waterlogging problems occurred.

Soybeans

Three thousand (3,000) hectares were planted to soybeans. Dryland crops were flowering the first week of January, with irrigated crops the middle of January. Late sown crops were at the 4-leaf stage in the middle of January.

Guar

Two hundred fifty (250) hectares were planted for an experimental crop sown during January. Crops are at the 2-leaf stage.

Fiber Crops

Cotton

The squaring stage was reached during January; there was a high proportion of damage from mirid bugs. There are also bacterial blight problems. Dryland cotton is progressing well; it is now 50 cm high, setting bolls with no signs of severe moisture stress.

Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Coonamble  
Monthly Crop Report  
March 1981

Seasonal Conditions

Very dry conditions were encountered with overall little or no subsoil moisture. Northern Walgett Shire still has some feed; it received 25mm to 35mm in the beginning of April. Quambone Shire received isolated storms.

Pastoral Conditions

Farmers are drought feeding sheep; there is little or no feed on pastures.

Winter Cereals

Wheat

Seventy percent of the fallow area has been worked. Conditions in Coonamble are not promising for this year's crop.

Summer Cereals and Oilseeds

Cowpeas

Isolated pockets of cowpeas were sown. It is too late for grain, but it can be used for feed; 60-70 tonnes are expected to be produced.

Irrigated Sorghum

The crop yielded well around Walgett, with about 1,000 tonnes produced.

Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Coonamble  
Monthly Crop Report  
June 1981

No reports available for April or May.

Seasonal Conditions

Small regular rains were received for the month. Sowing has been delayed due to the wet conditions.

Pastoral Conditions

Pastures are slow growing, cattle are being feed hay and grain.

Winter Cereals

Sowing was delayed due to wet weather, only 60 percent of the area in Coonamble Shire (out of 120-130,000 hectares) has been sown, and 80 percent of Walgett Shire has been sown (out of 150,000 ha). The area sown to oats will be greater than the previous season. Walgett Shire will increase the area sown dramatically over the last crop year harvested (1978 in this shire).

Summer Crops, Fibers, and Oils

Safflower

Two thousand (2,000) hectares are expected; if conditions continue, some waterlogged wheat areas may be sown to safflower.

No report on rapeseed or linseed.

Other Winter Crops

Lupins

The lupin area will be considerably less, due to late sowing rains.

Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Coonamble  
Monthly Crop Report  
July 1981

Seasonal Conditions

Excellent rain was received. Mild weather conditions prevailed.

Pastoral Conditions

Growth was excellent due to mild conditions. There is renewed interest in lucerne sowings. Some feeding is being done for lambing ewes.

Winter Cereals

There were some delays in planting, but the majority of the crop is in. Late sown areas have drowned in the Gulargambone area. The wheat area in Coonamble is 130,000 hectares. The wheat area in Walgett is 150,000 hectares. Early sown crops are doing well. Red-legged earth mites (blue oat mite) are severe in some areas; spraying is being done.

Other Winter Crops

Lupins

A few areas were sown, but rain was too late for most sowings to be made.

Summer Cereals and Oilseeds

Safflower

There is increased interest, but it is not likely to increase in area beyond the 2,000 hectares early estimate. Some areas west of Walgett, closer to Brewarrina, may be sown.

Sorghum and Sunflower

Growers that lost winter cereals are expressing interest in these crops.

Diseases, Pests, and Weeds

Extensive damage occurred to cereal crops by Red-legged earth mites. Spraying has been carried out. Good weed control was achieved by using Roundup (an herbicide). There was increased interest in postemergent broadleaf and wild oat herbicides.

Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Coonamble  
Monthly Crop Report  
August 1981

Seasonal Conditions

Light rains and colder conditions generally slowed crop growth.

Pastoral Conditions

There is good growth in pastures and good establishment of lucerne with only a few blue green aphids reported. Excellent conditions overall.

Winter Cereals

Coonamble - 130,000 hectares

Walgett - 150,000 hectares

Crops were progressing well, with good recovery of crops from red-legged earth mites. Late sown crops need good spring conditions to make up for lost time. Spraying is underway for wild oats and broadleaf weeds. All crops (cereals) are now sown.

Summer Cereals and Oilseeds

Safflower

Two thousand (2,000) hectares were sown. Sowing is complete. The late increase in area did not occur.

Sorghum and Sunflower

A small area will be sown to sorghum if the rains come. Sunflower production is being discouraged.

Diseases, Pests, and Weeds

Red-legged earth mite activity ended due to rain and colder weather. Most farmers are waiting for growth before using 2,4-D on weeds; "rape", wild turnip, mustard, and turnip weed are the major broadleafed weeds; others are fumitory, deadnettle, wild radish, amsinkia, and corn gromwell.

Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Coonamble  
Monthly Crop Report  
September 1981

Seasonal Conditions

Conditions for the month were hot, dry, and windy. Then in late August they turned cool and frosty with 35°C temperatures for "Spring". The crops are severely stressed; they will not be considered an "average crop".

Pastoral Conditions

Pasture conditions are good in most areas. Barley grass has burnt off. Baling of barley grass and medic has taken place. Blue green aphids are present in lucerne crops.

Winter Cereals

The rain at the end of the month was too late and not enough to maximize yield in most wheat crops. So far, one third of the Walgett crop will not be harvested. At least 50mm of rain is needed for an average yield in Coonamble Shire.

Other Winter Crops

Lupins (400 hectares)

There are heliothis problems; lupins are in the pod-filling stage; most crops progressing well.

Summer Cereals and Oilseeds

Safflower (2,000 hectares)

Rain is needed.

Sorghum

Little activity so far, rain is needed before sowing can take place.

Cowpeas

A considerable area is expected to be sown after the rains come.

Coonamble  
September 1981 (Continued)

Diseases and Pests

Blue green lucerne aphids are present in native medic and lucerne. Weed webworm is present in seedling lucerne. There is heliothis activity in lupins and severe heliothis in cereal crops. Brown wheat mites are in drought-affected Walgett crops.

Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Coonamble  
Monthly Crop Report  
October 1981

Seasonal Conditions

Excellent rainfall was received throughout the district.

Pastoral Conditions

Conditions are good. With the October rain, summer pasture growth should begin.

Winter Cereals

Wheat

Very good rainfall and mild conditions should give the crops respectable yields. Crops have recovered well. Yields in Coonamble Shire are 1.2 tonnes/ha, and better on later crops. Walgett crops have an expected average yield of 0.8 tonne/ha.

Barley and Triticale

Crops are good. Triticale adapted well to the dry conditions.

Other Winter Crops

Lupins

The lupin crop is progressing.

Summer Cereals and Oilseeds

Safflower

Safflower received a good boost from the rains. Rutherglen bugs are a problem.

Sorghum

Small areas were sown to sorghum.



Coonamble  
October 1981 (Continued)

Cowpeas

A large area was sown due to strong demand. There is some cutworm present in early crops.

Diseases and Pests

Crown rot in some areas is severe. Heliothis is present in cereal crops. Rutherglen bugs are a problem in safflower and wheat.

Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Coonamble  
Monthly Crop Report  
November 1981

Seasonal Conditions

Conditions were mild until the end of November and hot to very hot since.

Pastoral Conditions

Good growth.

Winter Cereals

Wheat

Mild conditions during the grain-filling period assured average yields in Coonamble of 1.2 tonnes/ha or better; Walgett area reports yields of only 0.8 to 1.0 tonne/ha. Harvest was delayed due to regrowth; only 40-50 percent is harvested, with poor grain quality, mottling, and sprouting. Most of the barley is harvested with a little better yield than wheat.

Summer Cereals and Oilseeds

Safflower

Ideal grain-filling conditions existed; yields of 0.8 tonne/ha reported.

Sunflower

Small crops are doing well. There are Rutherglen bug problems.

Sorghum

A considerable area was sown, (2,000 to 3,000 hectares).

Cowpeas

A large area was sown; emergence was good.

Diseases and Pests

There are Rutherglen bugs on safflower and cereal crops, with some malathion spraying occurring; some spotted alfalfa aphids are present.

Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Coonamble  
Monthly Crop Report  
December 1981

Seasonal Conditions

Conditions were hot and dry throughout the month; it was ideal harvesting weather.

Pastoral Conditions

Rain is needed to consolidate pasture growth. Parts of Walgett Shire are very dry again.

Winter Cereals

Wheat

Harvest was complete by the end of the month. The average yield in Coonamble Shire was 1.4 tonnes/hectare. Walgett Shire had a yield of approximately 0.8 tonne/hectare, with improved grain quality.

Summer Cereals and Oilseeds

Safflower

Harvest is complete. The average yield was 1.0 tonne/hectare. Some of the later crops did not fill well.

Sorghum and Cowpeas

These crops need rain.

Diseases and Pests

Crown rot severely reduced some wheat yields, especially the variety Songlen.

Summarization of the  
New South Wales Department of Agriculture  
Western Region  
Coonamble  
Monthly Crop Report  
January 1982

Seasonal Conditions

Excellent rains were received during late January.

Pastoral Conditions

Coonamble Shire has fair to good pastoral conditions.

Walgett Shire is much drier; rains are needed.

Winter Cereals

Fallowing for the 1982-83 crop is underway. There has been rapid growth in summer weeds in fallow fields; some chemical control has taken place.

Summer Cereals and Oilseeds

Sorghum and Cowpeas

These crops benefited from the rain. Yields are low for sorghum. Some cowpeas will be harvested for seed.

Diseases and Pests

Plague locusts may be a problem later in autumn; some control is now taking place.

## 9. WESTERN AUSTRALIA POLITICAL BOUNDARIES

The composition of districts and district boundaries has changed in recent years. In a comparison of the map of the "Statistical Areas, Western Australia as of June 1978", figure 9-1, with the map "Western Australian Department of Agriculture Advisory Services and Research Stations" (1981-82), figure 9-2, the following conclusions were reached.

- Two categories of changes were made: (1) changes that follow shire boundary lines and (2) changes that divide former shires.
- It appears that the following districts are in category 1:
  - Merredin
  - Northam
  - Moora
  - Three Springs
  - Geraldton
  - Lake Grace
  - Narrogin
- It appears that the districts in the southern part of Western Australia fall into category 2; some shires have been divided. Some of the category 2 districts are listed below.

- Jerramungup
  - Katanning
  - Albany
  - Manjimup
  - Bridgetown

No attempts were made to categorize any other districts, and no attempts were made to reconcile district changes and boundaries outside the nine ground data site areas for Western Australia.

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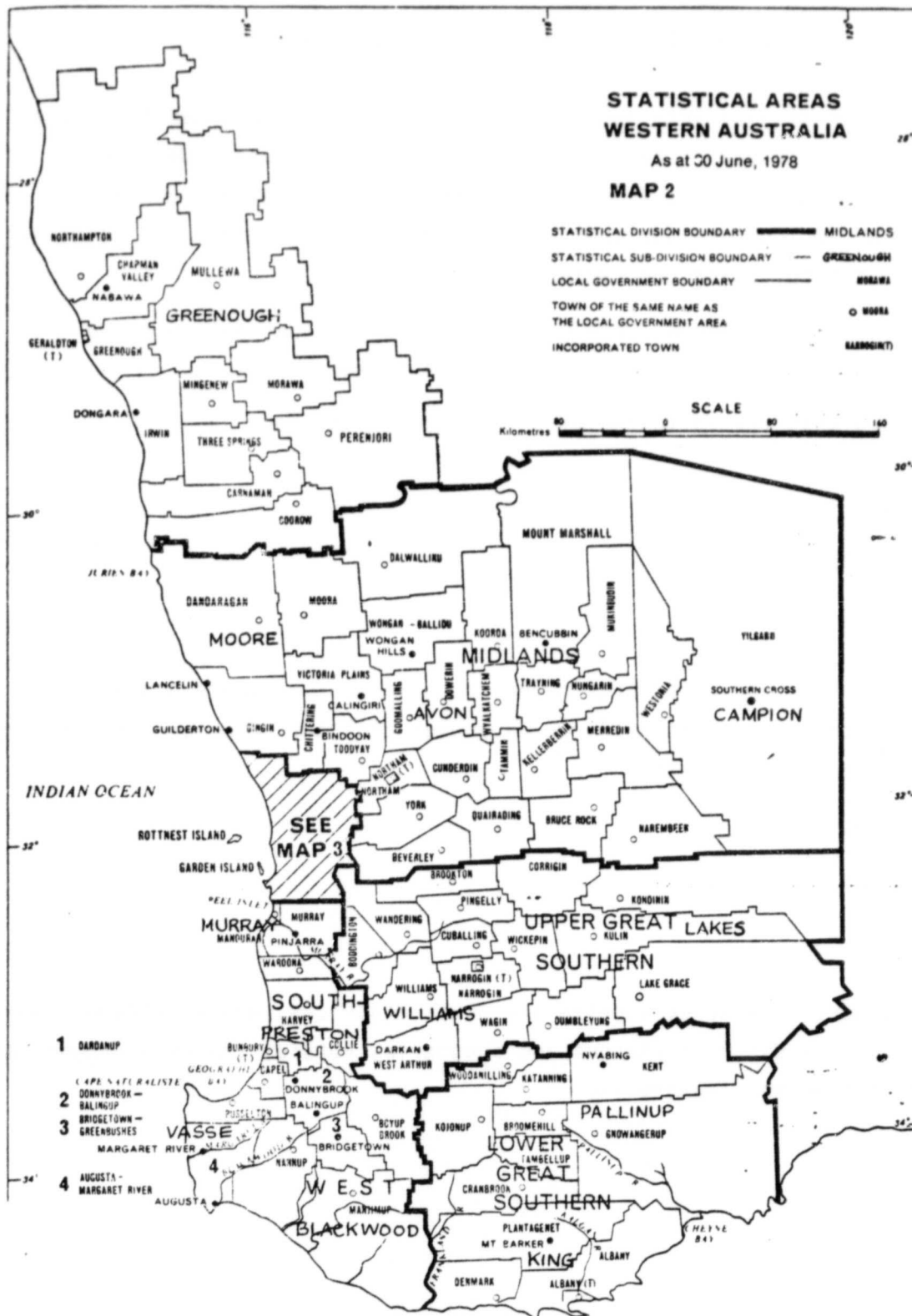


Figure 9-1.- Statistical areas, Western Australia, as of June 1978 (ref. 13).

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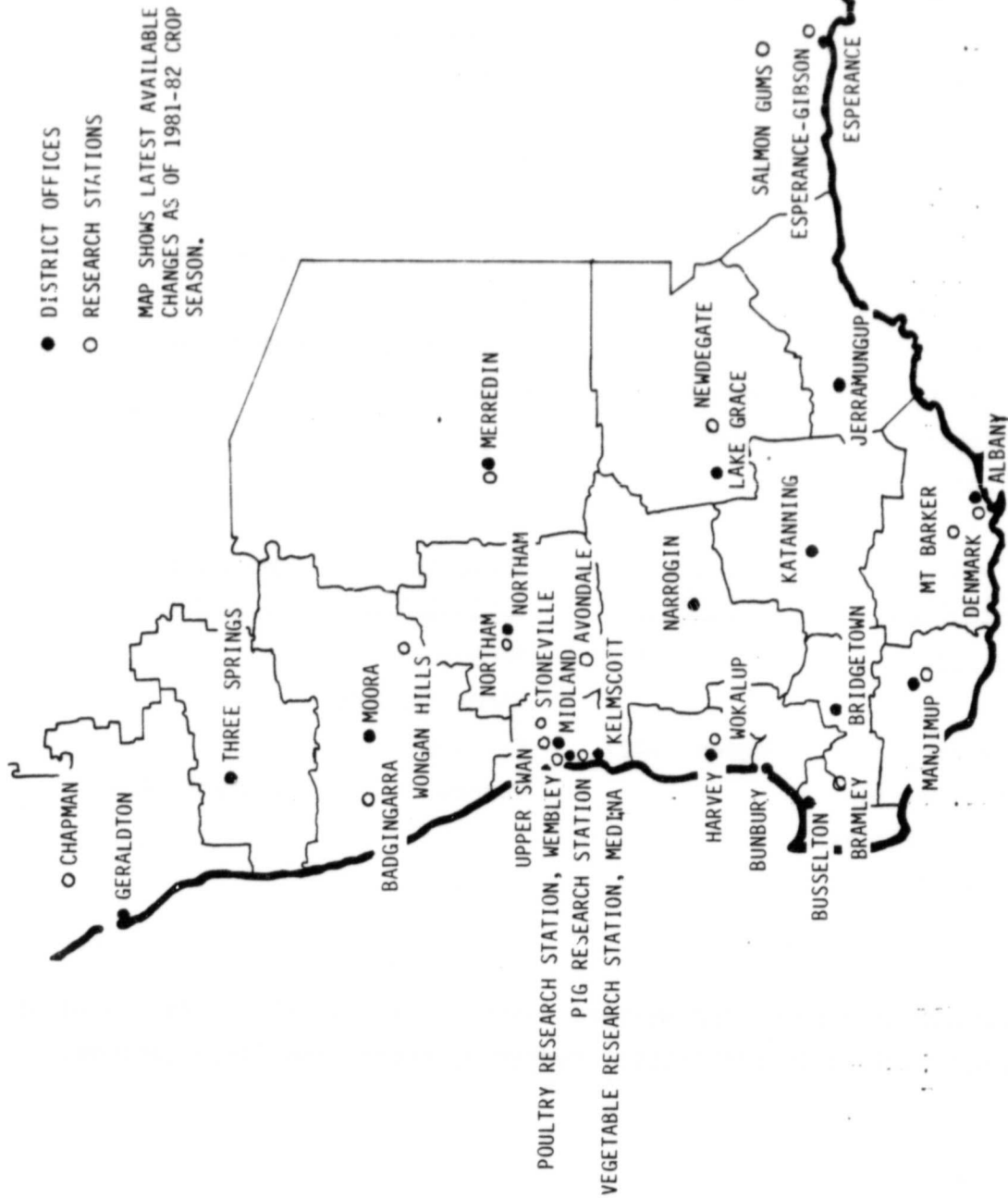


Figure 9-2.- Western Australian Department of Agriculture Advisory Services and Research Stations.

For the ground data sites, the districts and the shires within the districts are as follows:

<u>Merredin District</u>	<u>Ground data sites</u>	<u>Northam District</u>	<u>Ground data sites</u>
Mount Marshall		Wyalkatchem	
Koorda		Tammin	
Trayning		Goomalling	
Mukinbudin	Segment 4419	Toodyay	
Nungarin		Northam	
Kellerberrin	Segment 4412	Cunderdin	Segment 4410
Bruce Rock	Segment 4408	York	
Narembeen		Quairading	Segment 4422
Merredin	Segment 4416	Beverly	
Westonia	Segment 4423		
Yilgarn			

<u>Moora District</u>	<u>Ground data sites</u>	<u>Three Springs District</u>	<u>Ground data sites</u>
Dandaragan		Perenjori	
Moora		Three Springs	
Dalwallinu	Segment 4427	Carnamah	
Wongan-Ballidu		Coorow	Segment 4425
Victoria Plains			
Chittering			
Gingin			

District Agronomist Reports for Western Australia are available for three of the four ground data site districts: Merredin, Moora, and Three Springs.



## 10. FIELD INVENTORY, WESTERN AUSTRALIA

The following items appear in this section for each of the nine ground data collection sites in the state of Western Australia.

- a. Regional list
- b. Segment locational map
- c. Aerial photography/1981-82 crop season field inventory
- d. Landsat acquisition date
- e. Corresponding Landsat full frames
- f. Summarization of the corresponding District Agronomist Reports

Because of the large amount of specific field data collected on form A (the "initial farmer interview") and form D (additional clarifying comments), those data can be found in appendix A for both New South Wales and Western Australia. The text material for the 35mm slides of the fields is in appendix B.

Figure 9-1 in section 9 is a map showing the statistical areas of Western Australia; this map depicts the old district boundary areas. Figure 9-2 presents the Western Australia Department of Agriculture Advisory Services and Research Stations and shows the new district boundary areas in effect during the 1981-82 ground data collection.

### 10.1 MERREDIN DISTRICT

The shires and segments within this district are:

<u>Shire</u>	<u>Segment no.</u>
Mukinbudin	4419
Kellerberrin	4412
Bruce Rock	4408
Merredin	4416
Westonia	4423

Figures 10-1 through 10-15 consist of maps, aerial photographs, and Landsat acquisitions for segments in the Merredin District.

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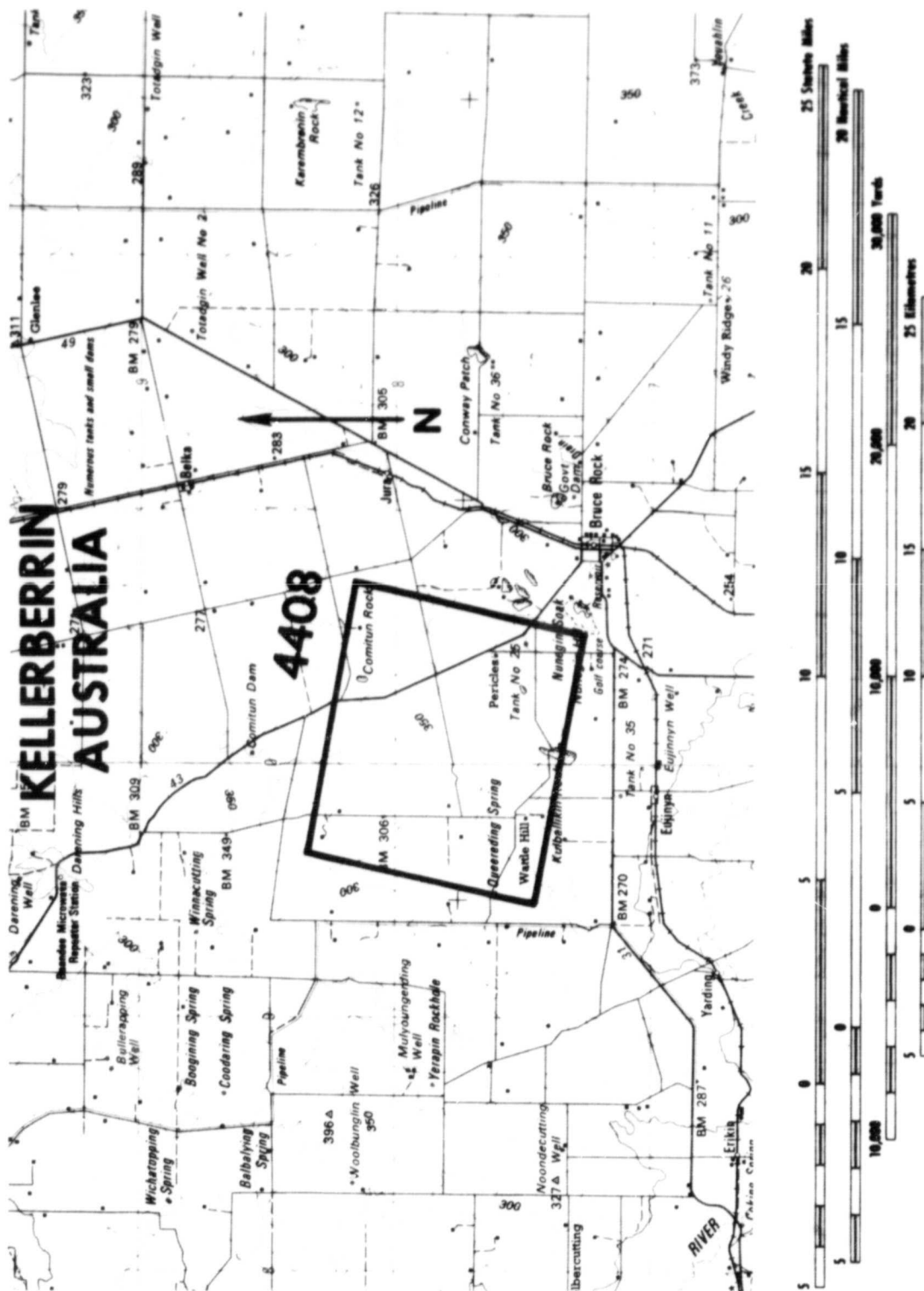


Figure 10-1.- Sample segment 4408, Bruce Rock Shire, Western Australia, Australia;  
map sheet KELLERBERRIN SH50-15, 1:250,000.

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Figure 10-2.- Aerial photograph (November 4, 1964) with 1981-82 inventory; segment 4408, Bruce Rock Shire, Western Australia, Australia.

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Figure 10-3.- January 12, 1982, Landsat acquisition for segment 4408, Bruce Rock Shire, Western Australia, Australia.

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Figure 10-4.-- Sample segment 4412, Kellerberrin Shire, Western Australia, Australia; map sheet KELLERBERRIN SH50-15, 1:250,000.



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Figure 10-5.- Aerial photograph (October 30, 1964) with 1981-82 inventory; segment 4412, Kellerberrin Shire, Western Australia, Australia.

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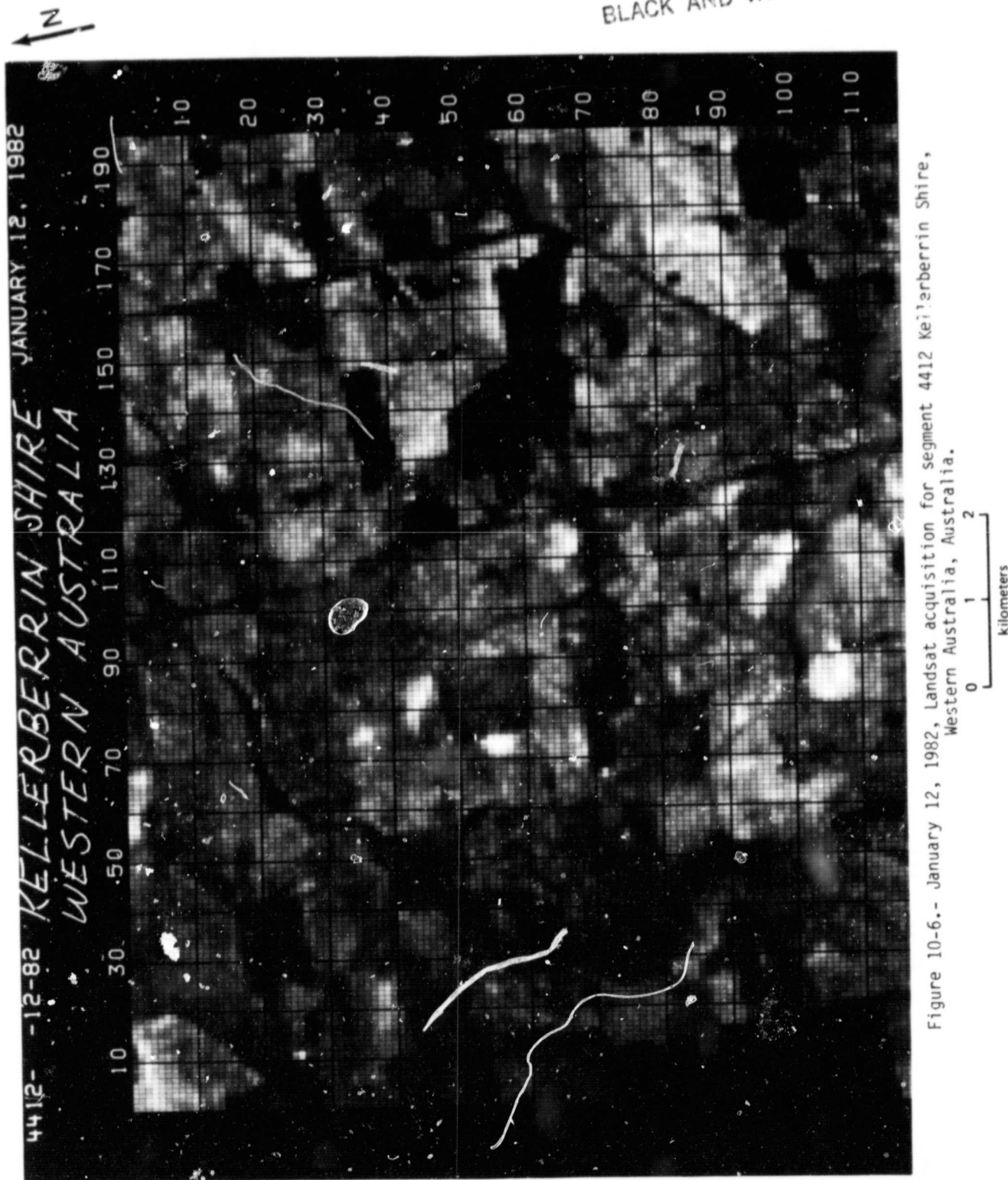


Figure 10-6.- January 12, 1982, Landsat acquisition for segment 4412 Kellerberrin Shire, Western Australia, Australia.

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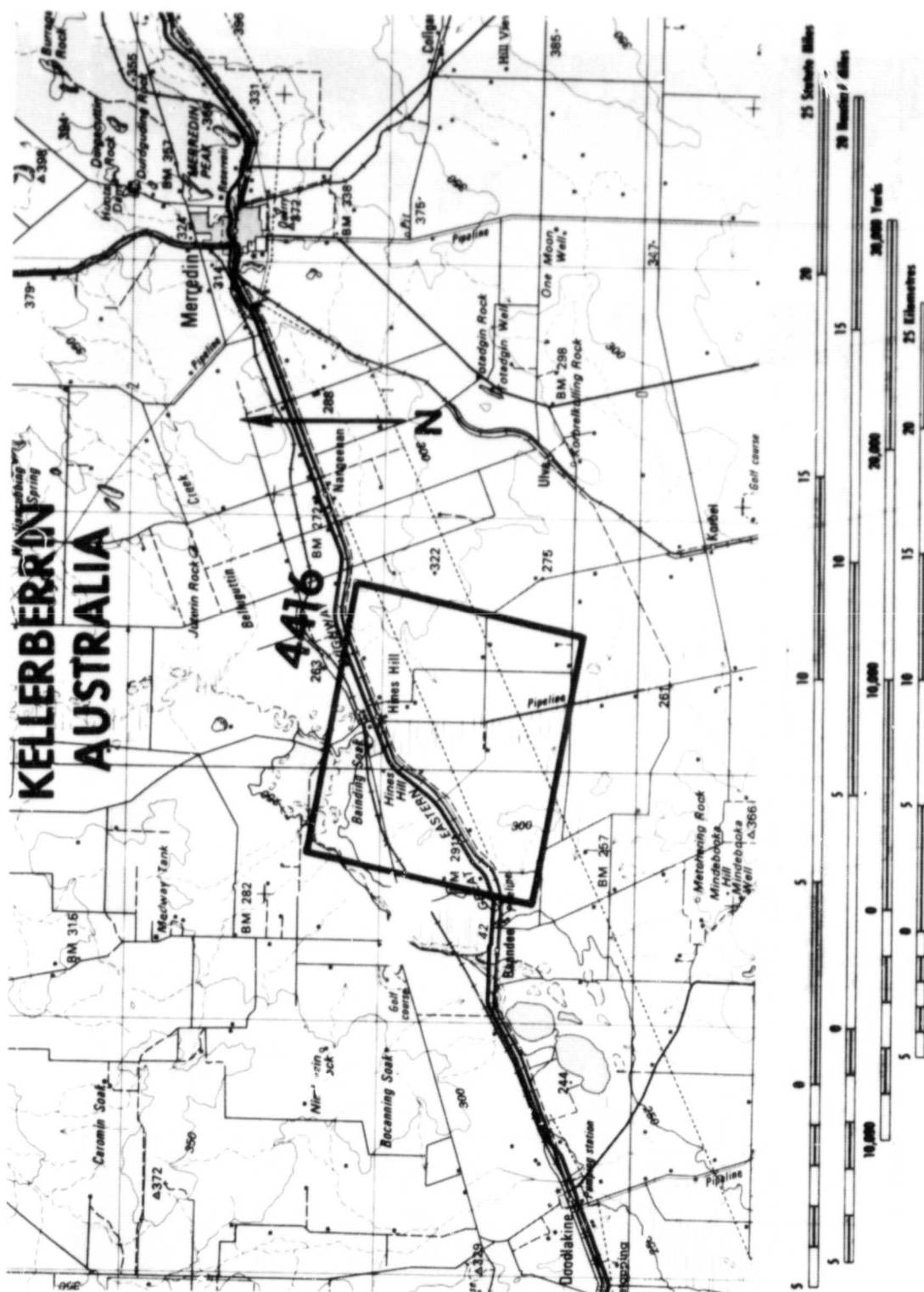


Figure 10-7.- Sample segment 4416, Merredin Shire, Western Australia, Australia;  
map sheet KELLERBERRIN SH50-15 1:250,000.



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Figure 10-8.- Aerial photograph (January 30, 1965) with 1981-82 inventory; segment 4416, Merredin (Hines Hill) Shire, Western Australia, Australia.

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Figure 10-9.- January 12, 1982, Landsat acquisition for segment 4416,  
Merredin Shire, Western Australia, Australia.

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segment 4419, Mukinbudin Shire, Western Australia, Australia;  
map sheet BENCUBBIN SH50-11, 1:250,000.

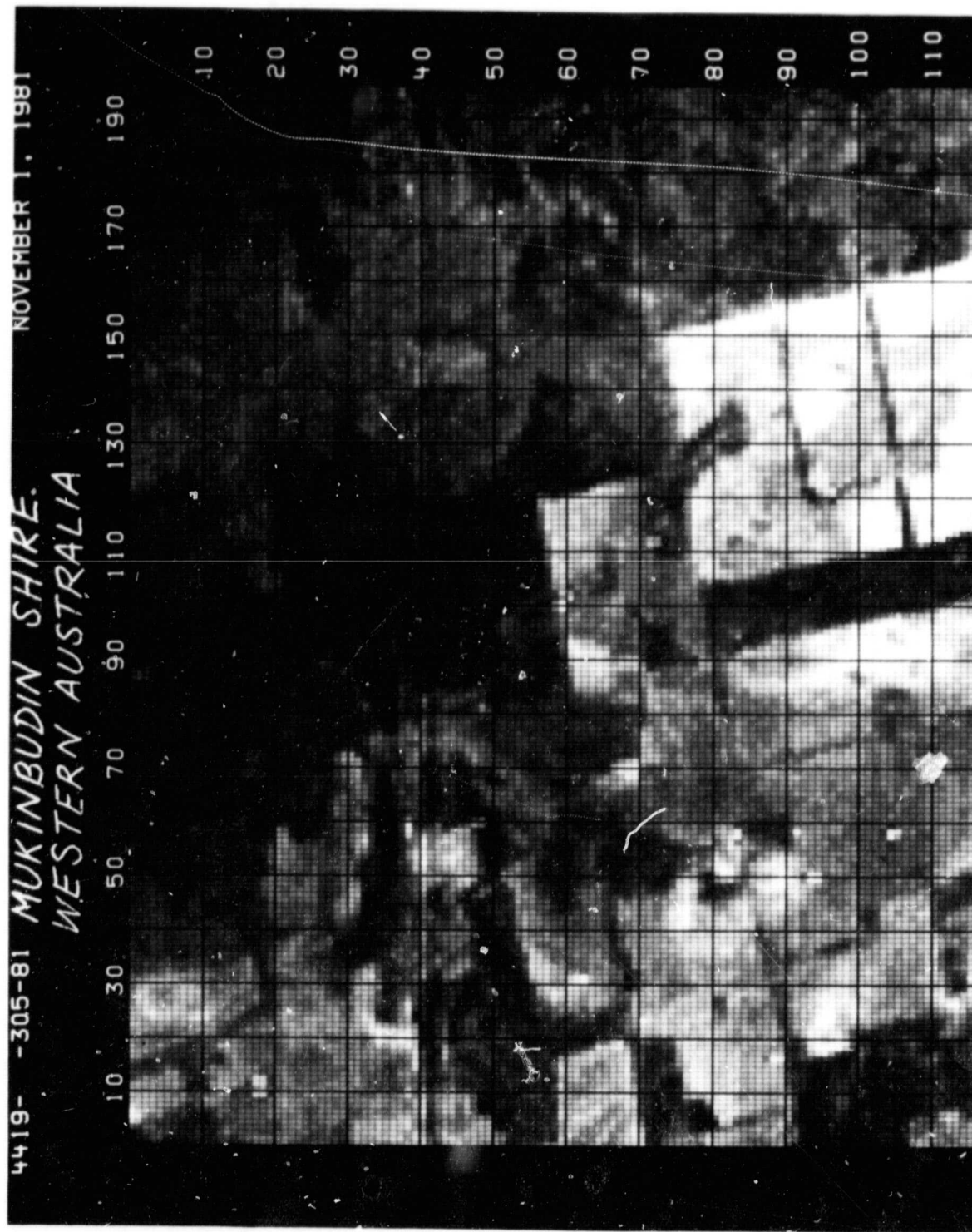
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Figure 10-11.- Aerial photograph (February 23, 1968) with 1981-82 inventory; segment 4419, Mukinbudin Shire, Western Australia, Australia.





4419- -305-81 NOVEMBER 1, 1981  
 MUKINBUDIN SHIRE.  
 WESTERN AUSTRALIA

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Figure 10-12.- November 1, 1981, Landsat acquisition for segment 4419, Mukinbudin Shire, Western Australia, Australia.

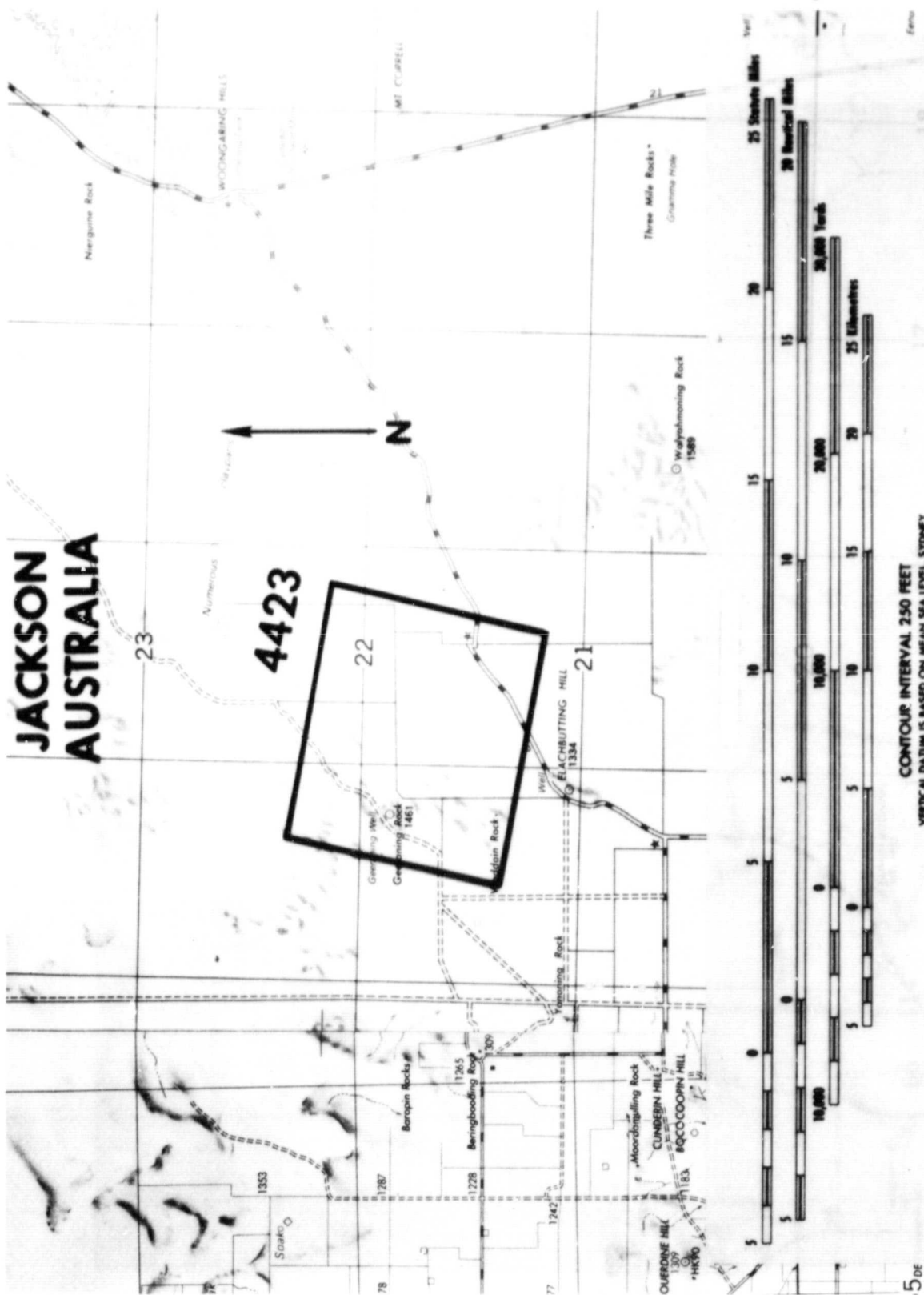


Figure 10-13.- Sample segment 4423, Westonia Shire, Western Australia, Australia;  
map sheet JACKSON SH50-12, 1:250,000.

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Figure 10-14.- Aerial photograph (April 4, 1968) with 1981-82 inventory; segment 4423, Westonia Shire, Western Australia, Australia.

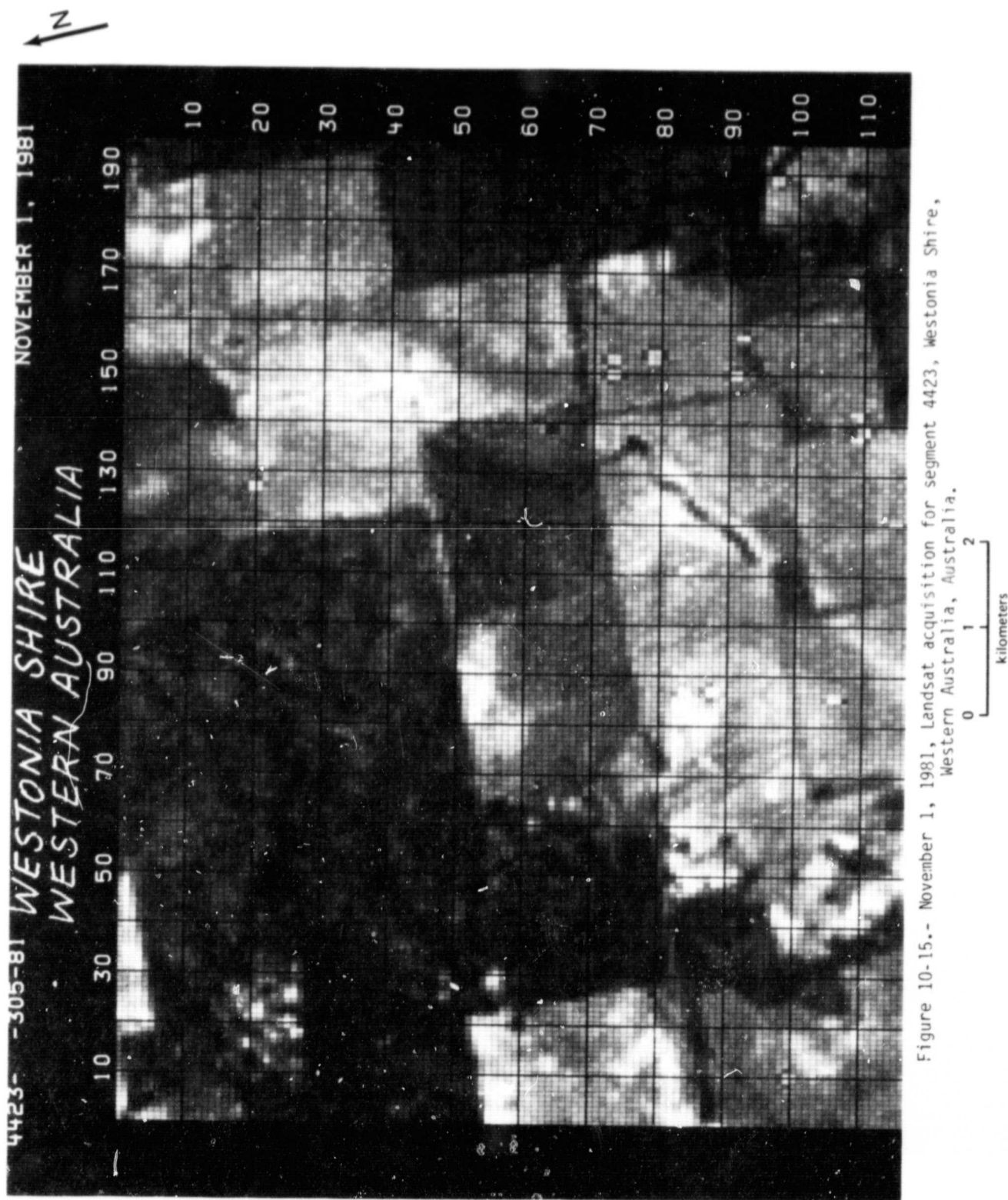


Figure 10-15.- November 1, 1981, Landsat acquisition for segment 4423, Westonia Shire, Western Australia, Australia.



## 10.2 NORTHAM DISTRICT

The shires and segments for this district are:

<u>Shire</u>	<u>Segment no.</u>
Cunderdin	4410
Quairading	4422

Figures 10-16 through 10-21 consists of maps, aerial photographs, and Landsat acquisitions for segments in the Northam District.

Figure 10-16.- Sample segment 4410, Cunderdin Shire, Western Australia, Australia; map sheet KELLERBERRIN SH50-15 1:250,000.

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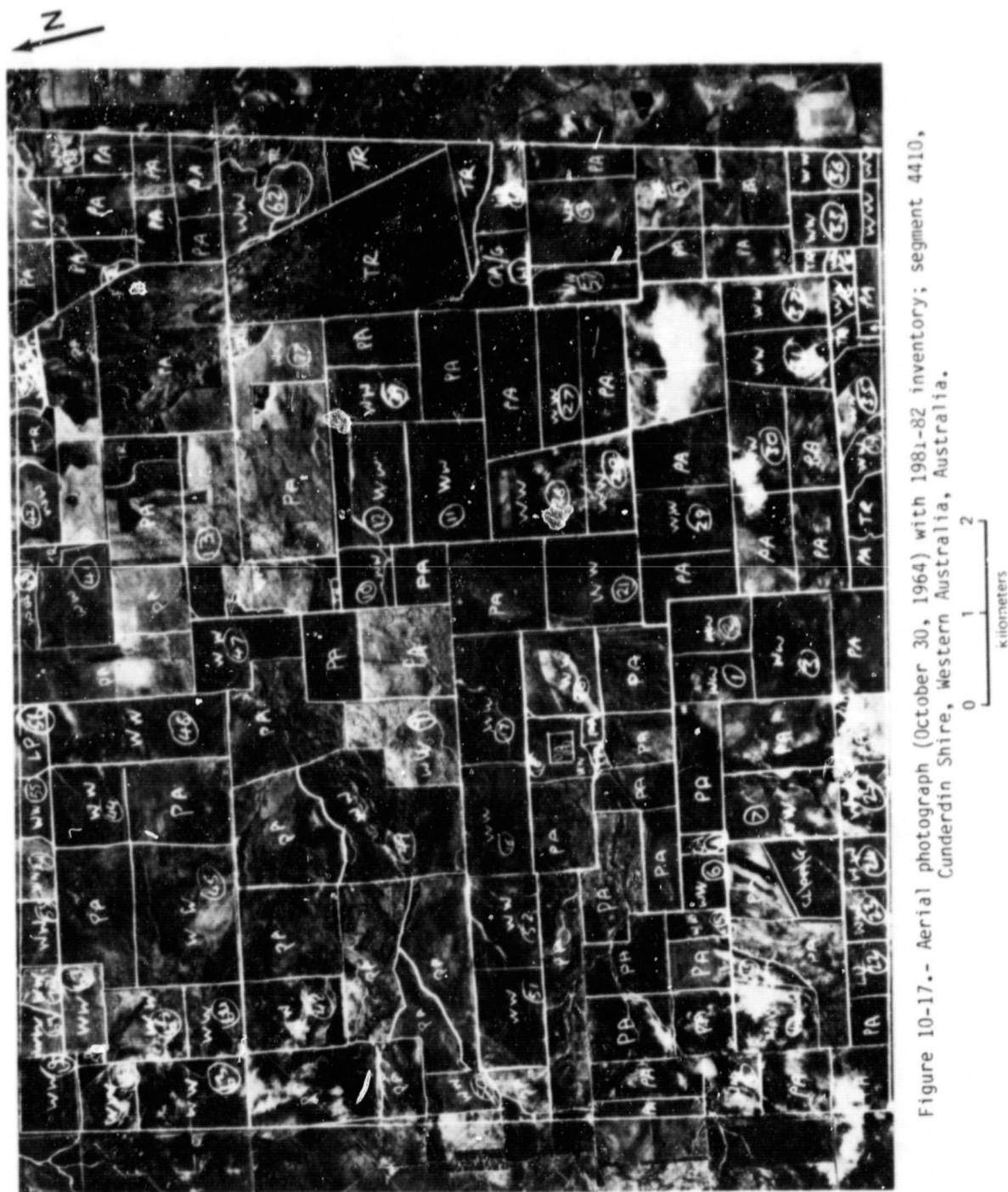


Figure 10-17.- Aerial photograph (October 30, 1964) with 1981-82 inventory; segment 4410, Cunderdin Shire, Western Australia, Australia.

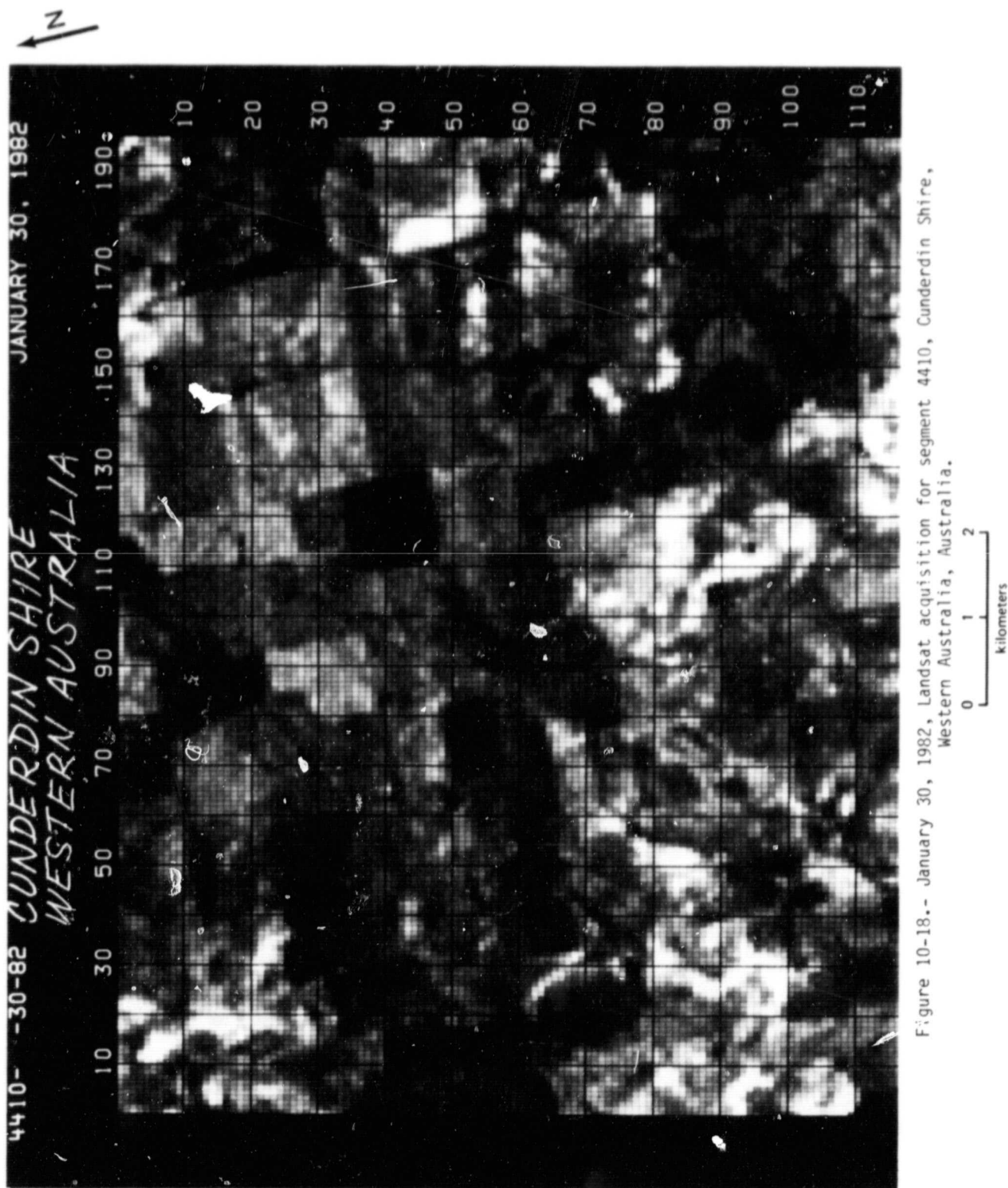


Figure 10-18.- January 30, 1982, Landsat acquisition for segment 4410, Cunderdin Shire, Western Australia, Australia.

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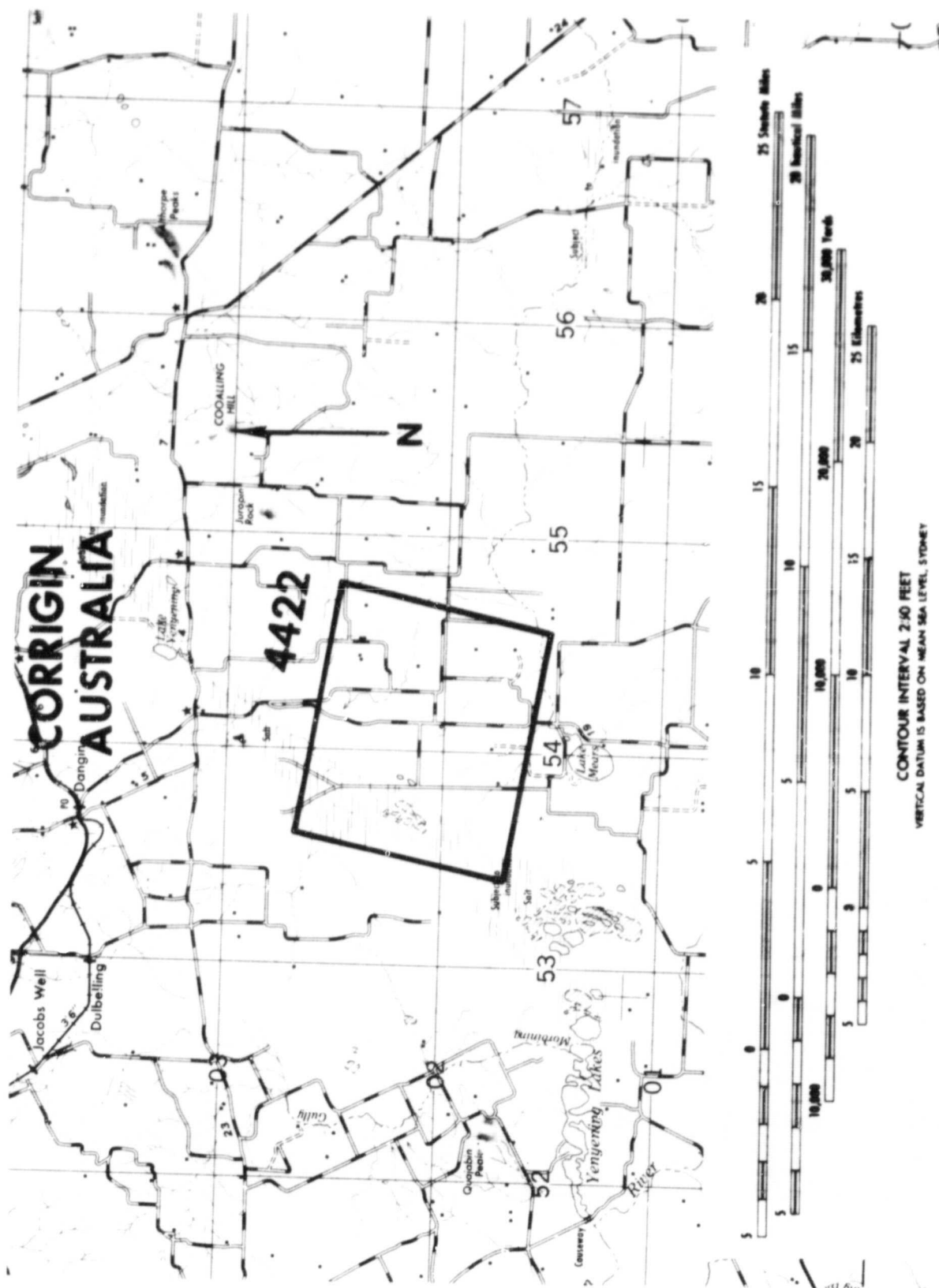


Figure 10-19.- Sample segment 4422, Quairading Shire, Western Australia, Australia;  
map sheet CORRIGIN S150-3, 1:250,000.





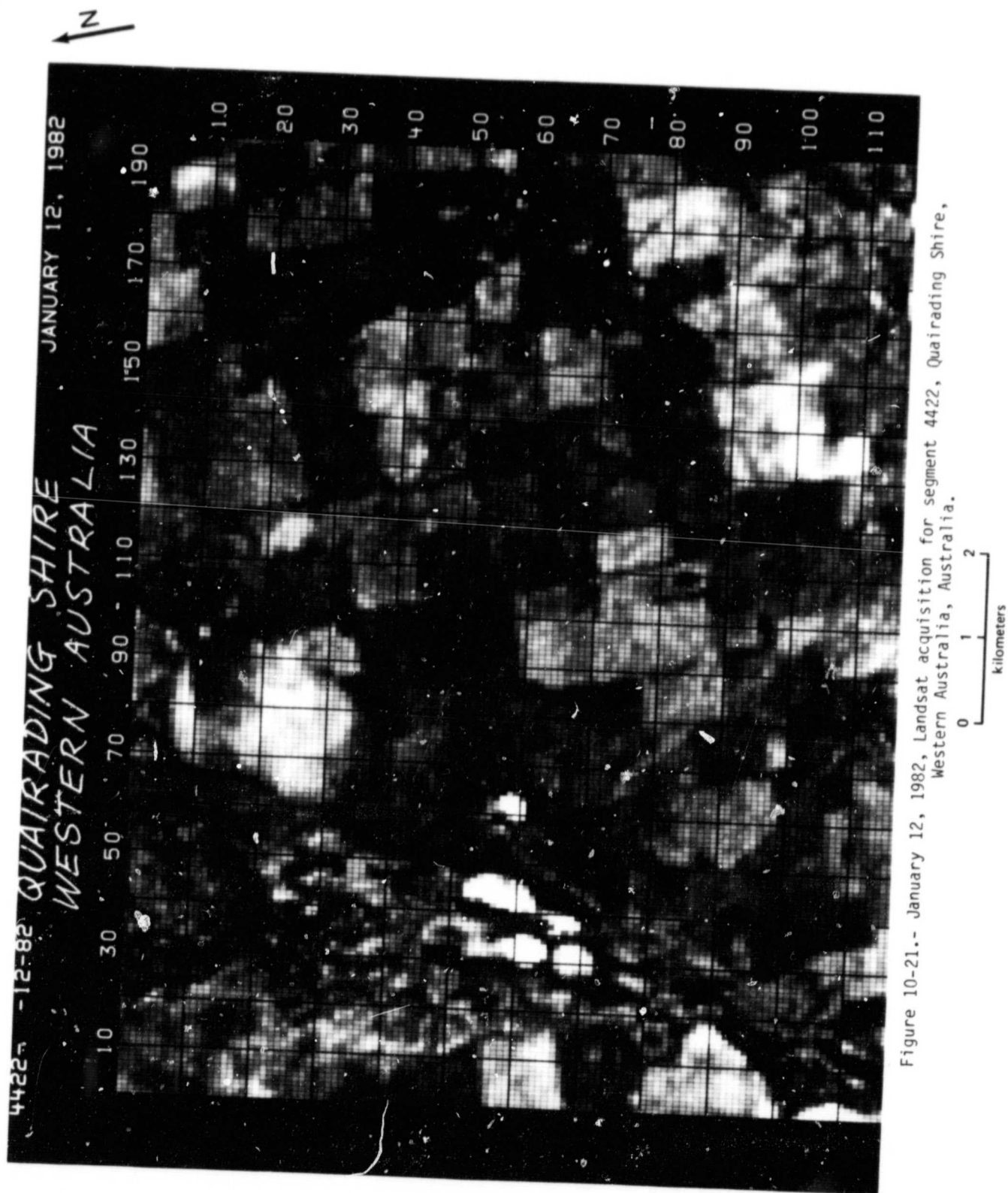


Figure 10-21.- January 12, 1982, Landsat acquisition for segment 4422, Quairading Shire, Western Australia, Australia.

### 10.3 THREE SPRINGS DISTRICT

The shire and segment for this district are:

<u>Shire</u>	<u>Segment no.</u>
Coorow	4425

Figures 10-22 through 10-24 consist of a map, aerial photograph, and a Landsat acquisition for the Three Springs District.



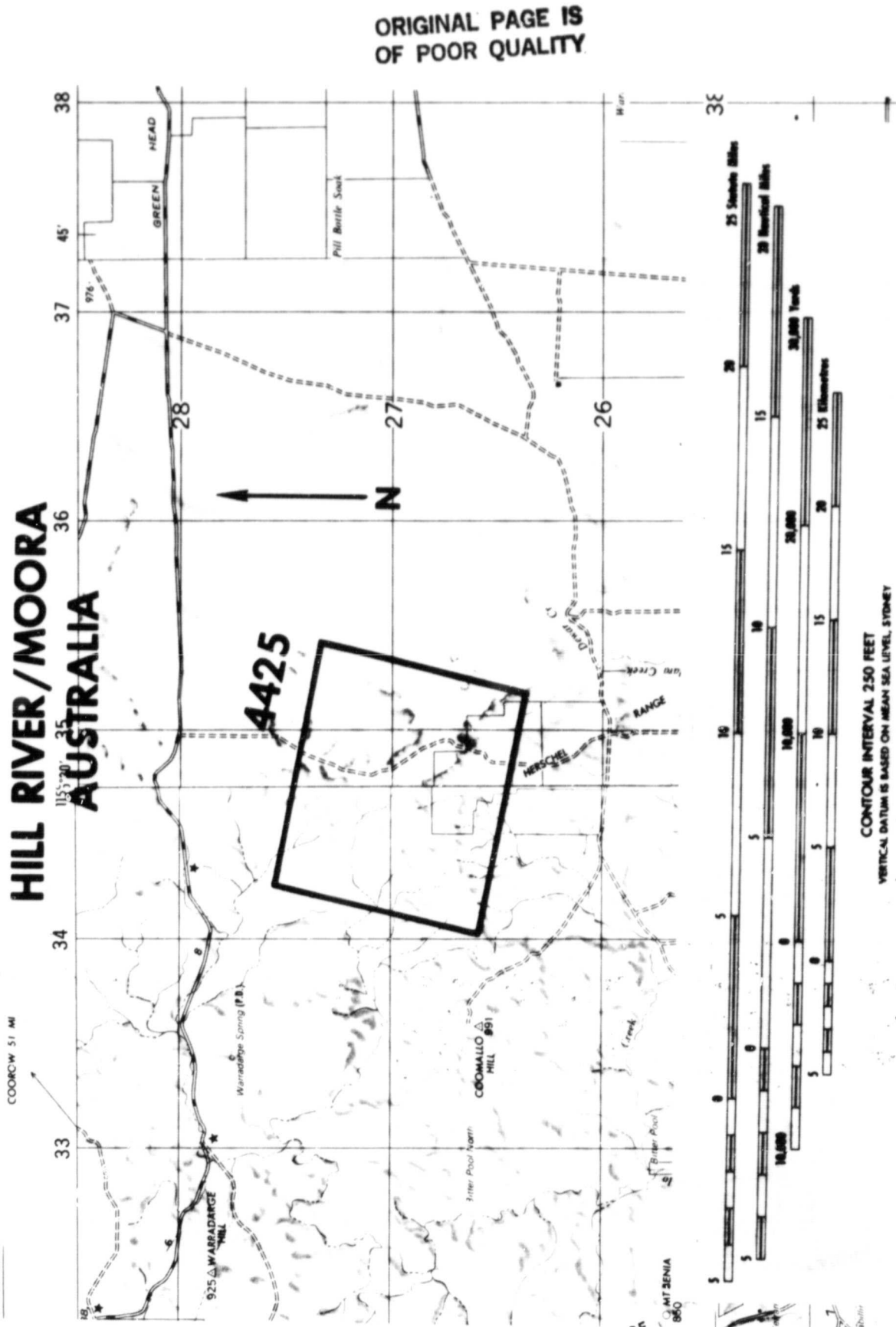


Figure 10-22.- Sample segment 4425, Coorow Shire, Western Australia, Australia;  
map sheet HILL RIVER/MOORA SH50-9/SH50-10, 1:250,000.

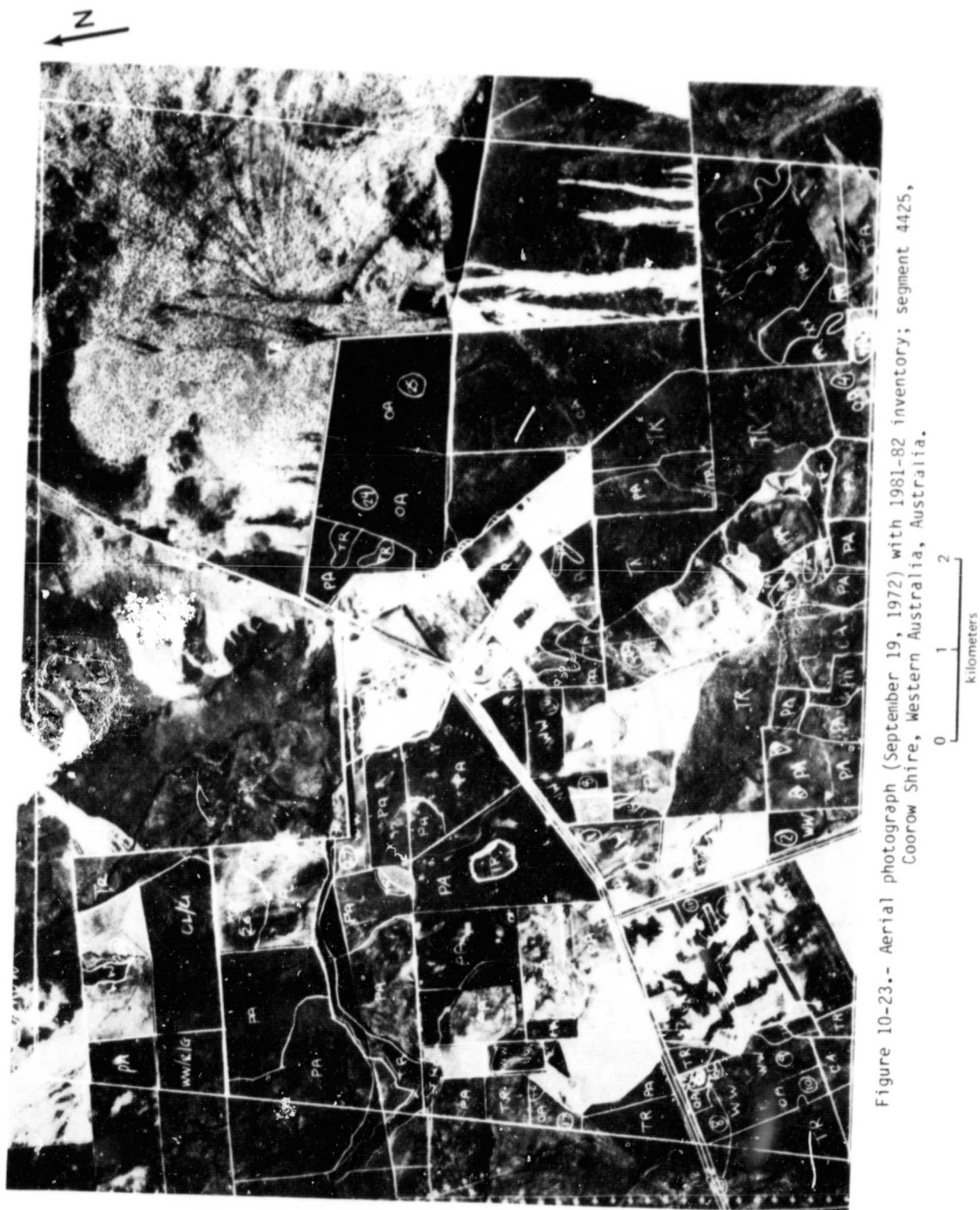
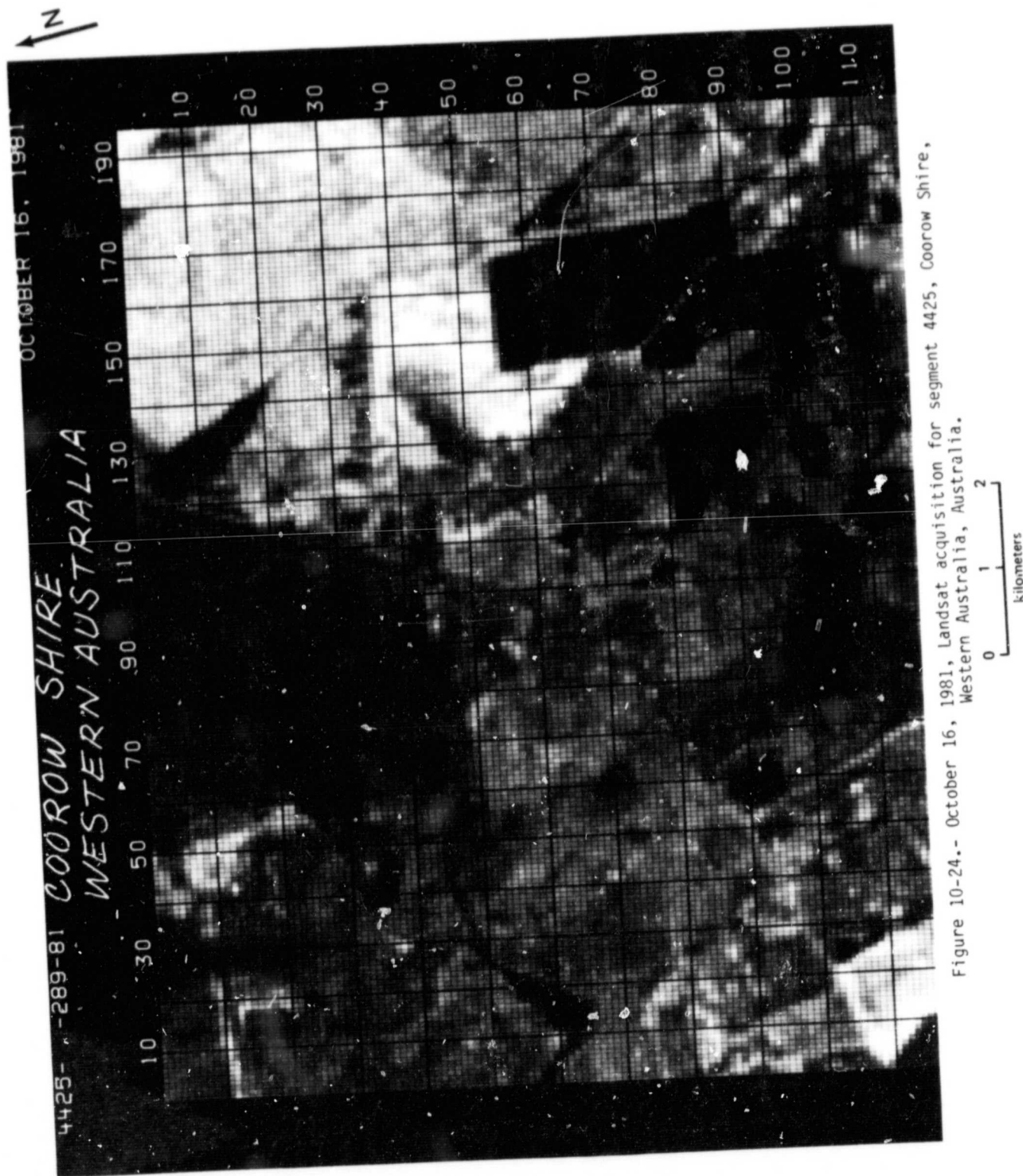


Figure 10-23.- Aerial photograph (September 19, 1972) with 1981-82 inventory; segment 4425, Coorow Shire, Western Australia, Australia.

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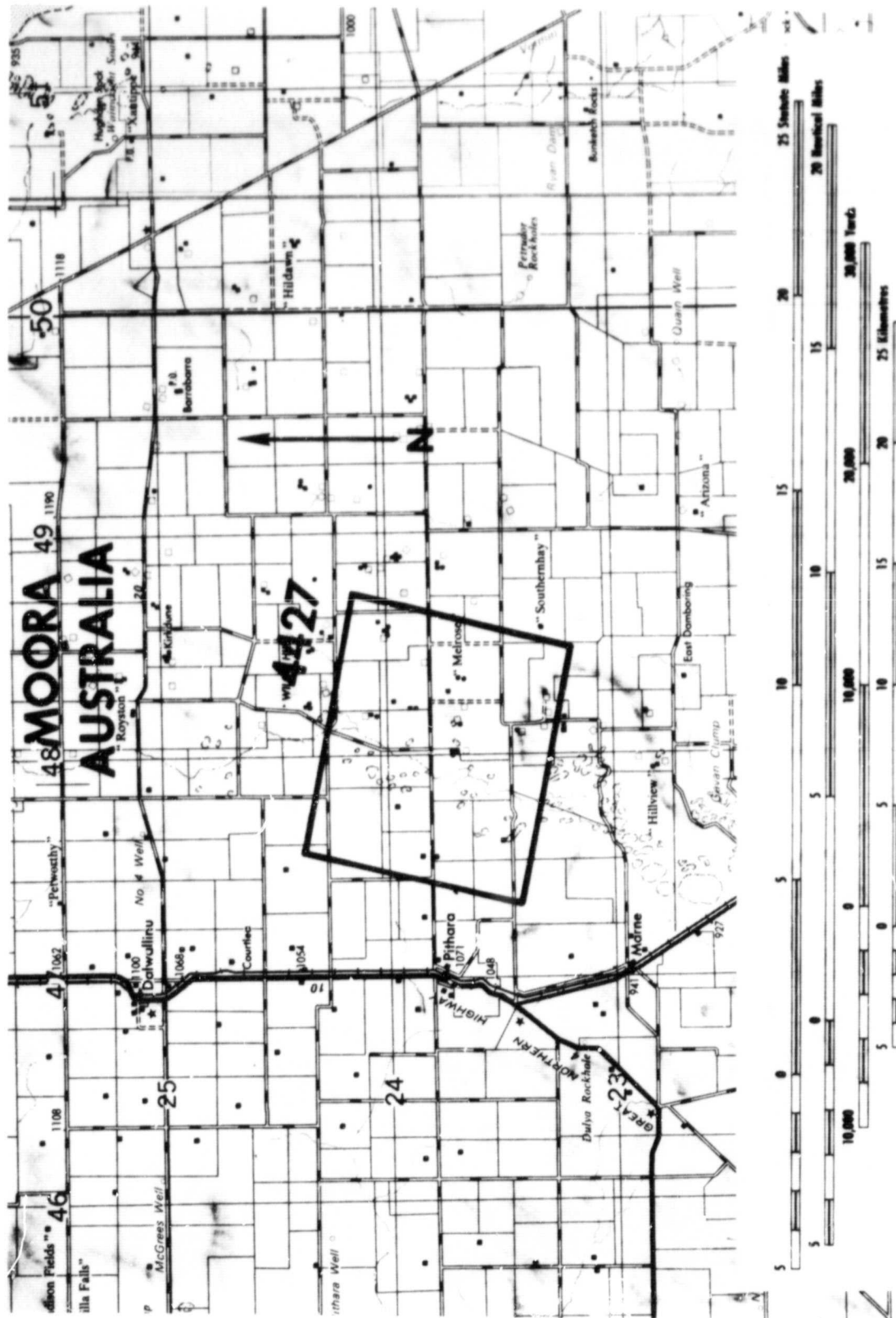
#### 10.4 MOORA DISTRICT

The shire and segment for this district are:

<u>Shire</u>	<u>Segment no.</u>
Dalwallinu	4427

Figures 10-25 through 10-27 consist of a map, an aerial photograph, and a Landsat acquisition for the Moora District.

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CONTOUR INTERVAL 250 FEET  
VERTICAL DATUM IS BASED ON MEAN SEA LEVEL, SYDNEY

Figure 10-25.- Sample segment 4427, Dalwallinu Shire, Western Australia; map sheet MOORA SH50-10, 1:250,000.



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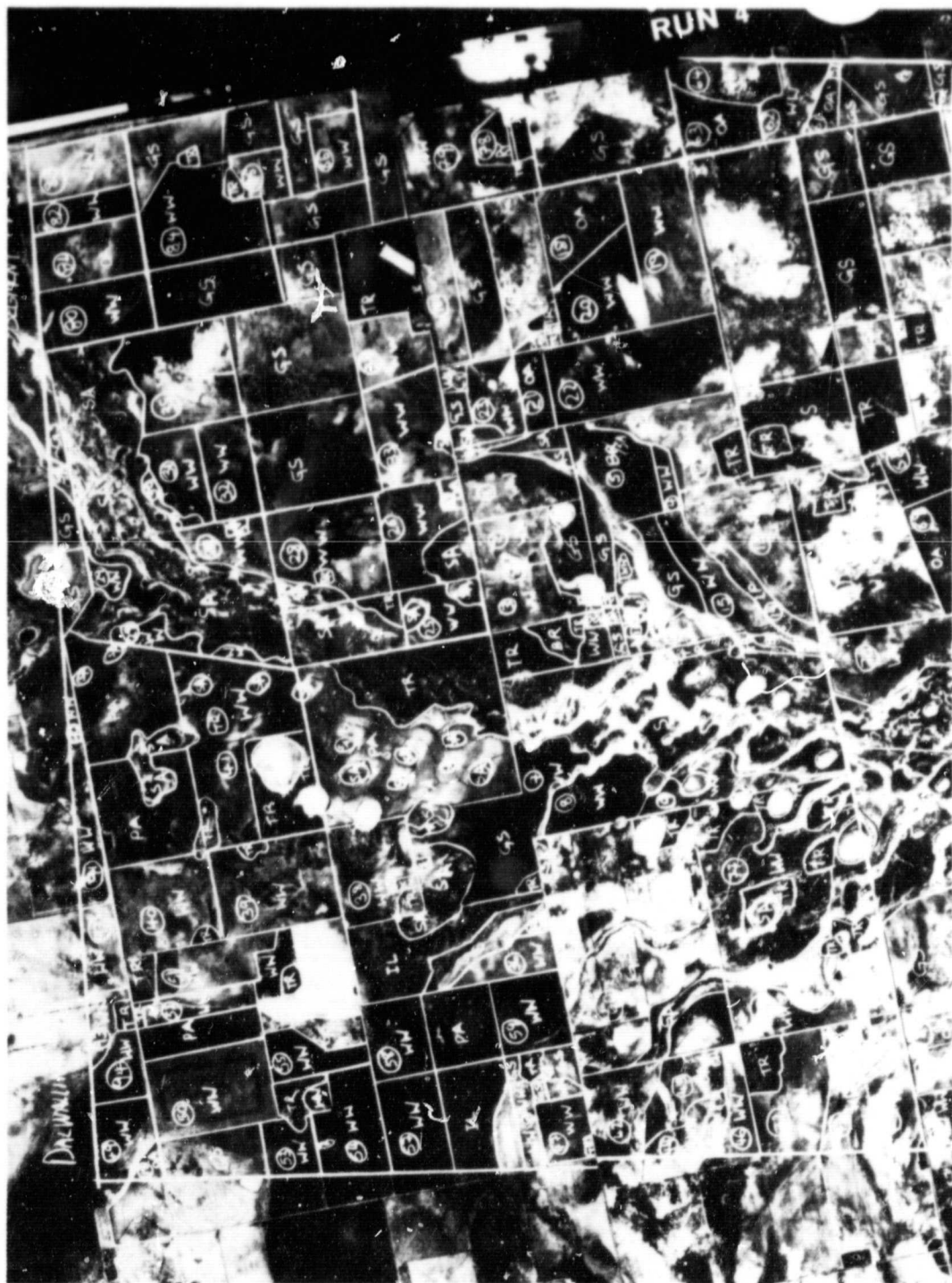
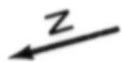


Figure 10-26. - Aerial photograph (September 19, 1972) with 1981-82 inventory; segment 4427, Dalwallinu Shire, Western Australia, Australia.

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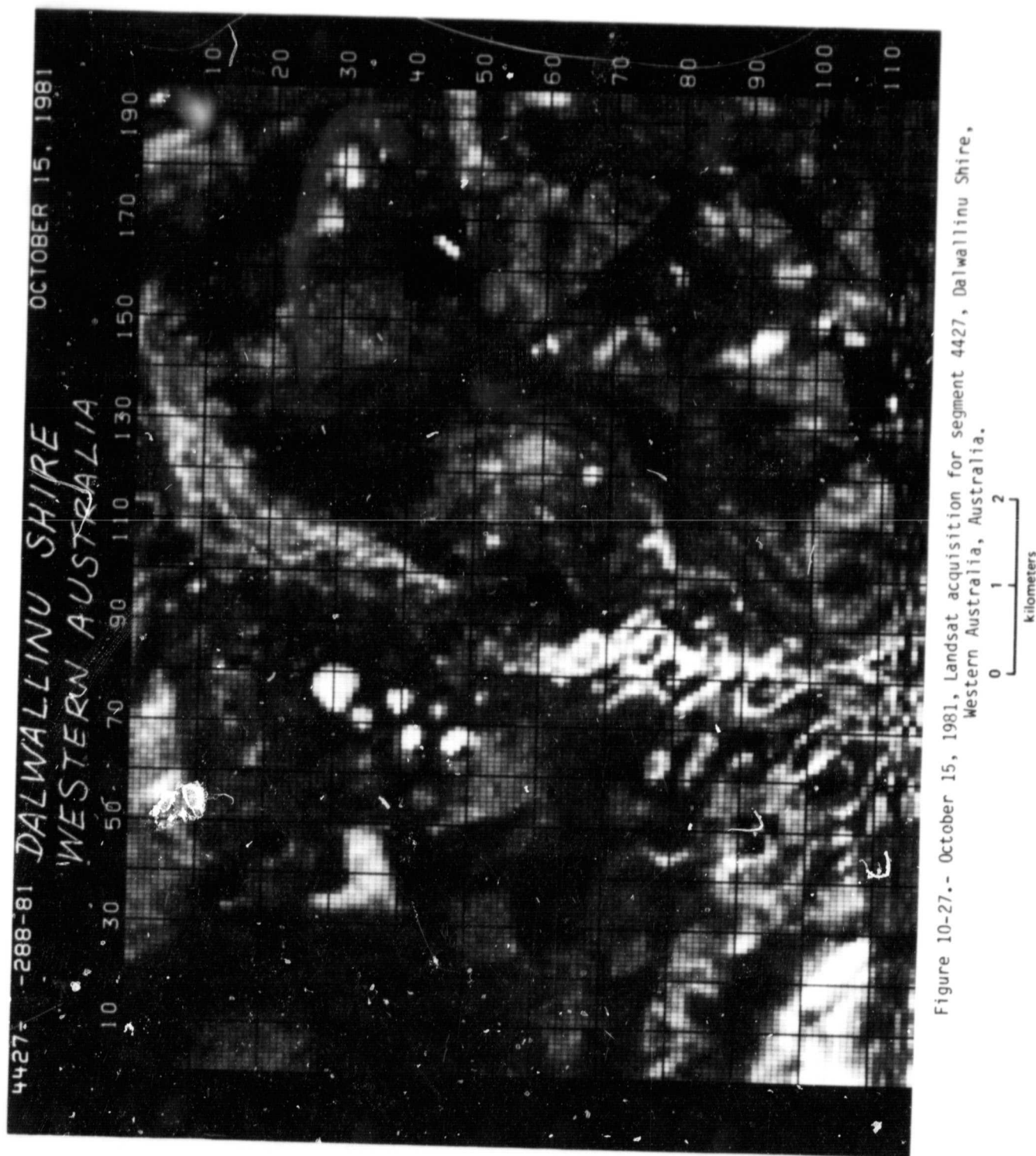


Figure 10-27.- October 15, 1981, Landsat acquisition for segment 4427, Dalwallinu Shire, Western Australia, Australia.

## 10.5 LANDSAT FULL FRAMES

Figures 10-28 through 10-30 present Landsat full frames for segments in the following districts.

- a. Merredin Agricultural District
- b. Three Springs and Moora Agricultural Districts
- c. Merredin and Northam Agricultural Districts



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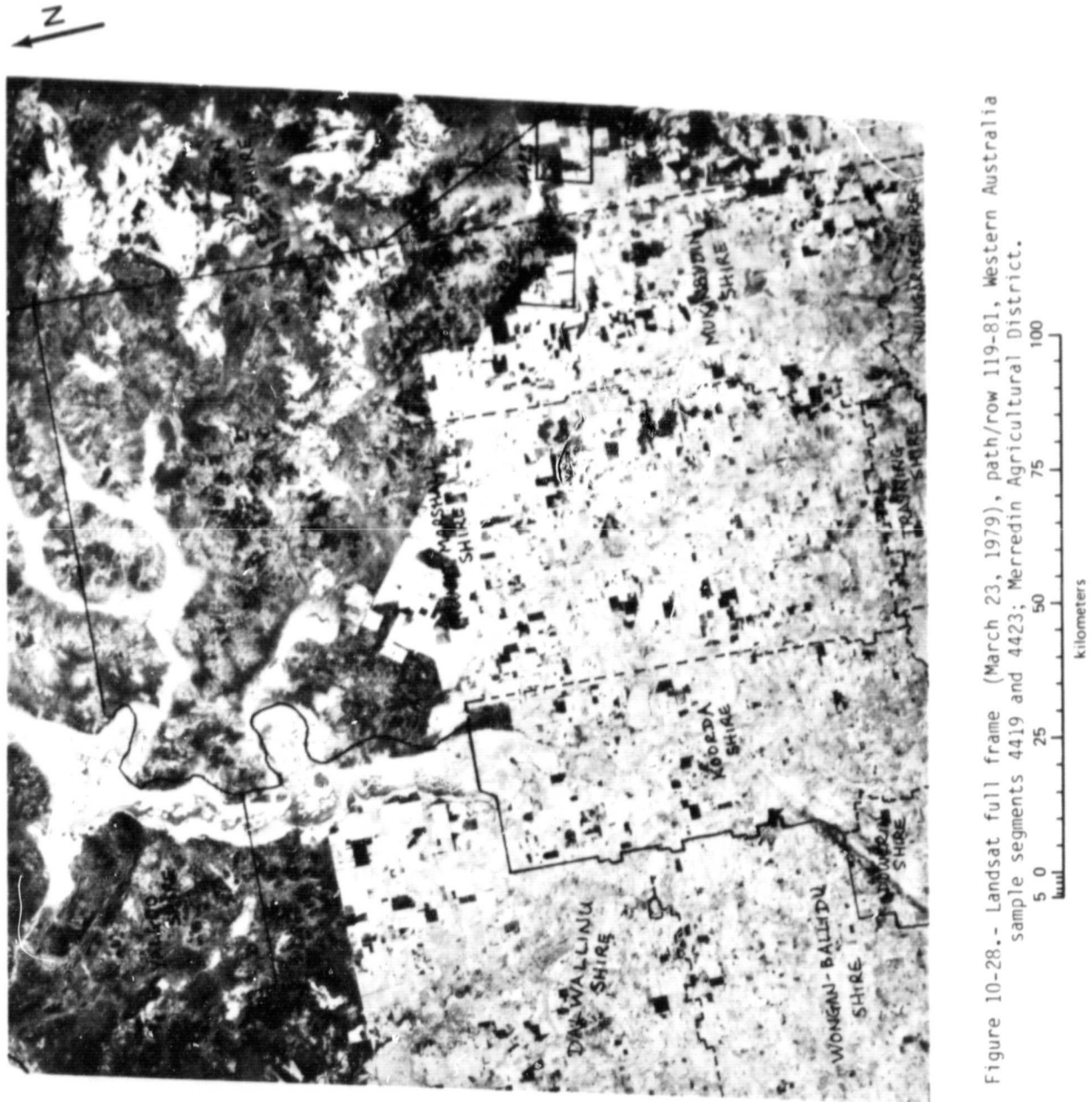


Figure 10-28.- Landsat full frame (March 23, 1979), path/row 119-81, Western Australia sample segments 4419 and 4423; Merredin Agricultural District.

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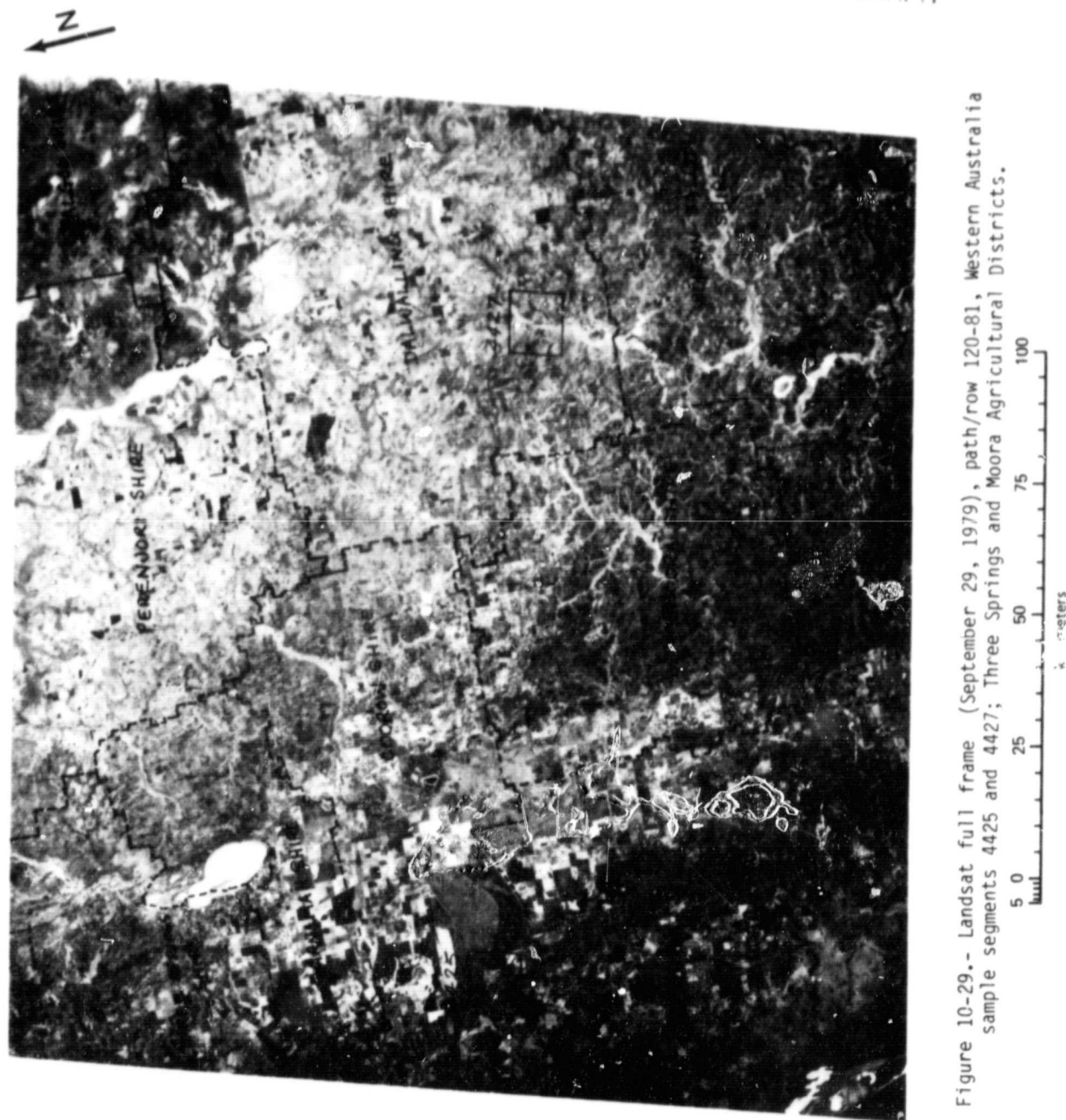


Figure 10-29.- Landsat full frame (September 29, 1979), path/row 120-81, Western Australia sample segments 4425 and 4427; Three Springs and Moora Agricultural Districts.

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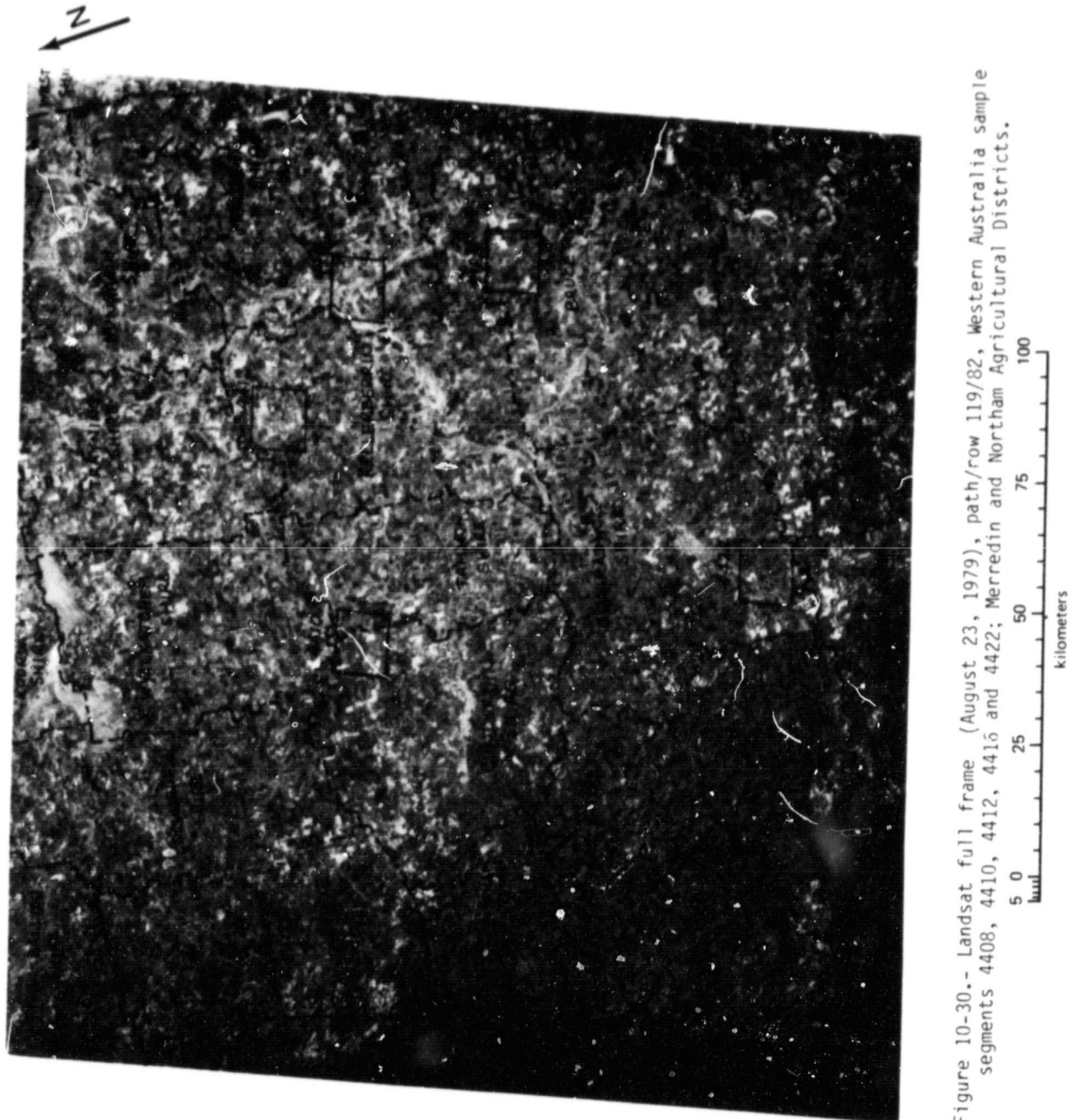


Figure 10-30.- Landsat full frame (August 23, 1979), path/row 119/82, Western Australia sample segments 4408, 4410, 4412, 4416 and 4422; Merredin and Northam Agricultural Districts.

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#### 10.6 SUMMARIZATIONS OF THE DISTRICT AGRONOMISTS REPORTS

Agricultural reports are written for each agricultural district by the District Agronomist. These reports are either monthly, quarterly, or yearly, dependent upon the district.

For this document, the material in these reports has been summarized (nearly in its entirety) and included herein. Listed below are the segments organized by district.

- a. Merredin District segments 4419, 4412, 4408, 4416, and 4423
- b. Northam District segments 4410 and 4422. No report was available for inclusion in this document.
- c. Moora District segment 4427
- d. Three Springs District segment 4425

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
January 1981

Seasonal Conditions

Below average rainfall was received for most areas. Flooding on January 11, 1981, in the Doodlakine-North Baandee area was reported. Strong winds have caused damage. Farmers are cultivating the eroded fields to try and minimize the damage. Some farmers have applied for drought declaration in the Mukinbudin/Koorda area.

Pastoral Conditions

The amount of feed available was reduced by wind and storms. Some farmers have had to sell off sheep to compensate.

No other report topics this month.

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
February 1981

Seasonal Conditions

Above average rainfall occurred in most areas. A steady rain fell for 2 to 3 days. Farmers have started land preparations. An estimated 10 percent of the area has been summer fallowed at this time. Dust storms are still a problem.

Pastoral Conditions

Germination has taken place in most paddocks, particularly in the Doodlakine North Baandee area (74mm rain in January). Afghan melon and paddy melon problems (weed) were reported - also low dam water supplies. Farmers in the Beacon Cleary area are carting water.

No other reports for this month.

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
March 1981

Seasonal Conditions

Below average rainfall was received. Germinated areas were reported last month after the February rains curtailed. Some stubble regrowth and summer weeds, such as melons and goosefoot, were reported, especially in the areas of Bruce Rock, Narembeen, and north of Merredin. Dust storms are still a problem.

Pastoral Conditions

Farmers are hand-feeding.

No other reports this month.

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
April 1981

Seasonal Conditions

Below average rainfall. The main rains occurred during April 17-20. Land preparations continued after the rains.

Pastoral Conditions

After the rains a green growth was evident in many fields. In the northern part of this district, water-carrying has been taking place.

Winter Cereals or Crops

A few farmers in the Southern Cross area have started seeding. Other areas have been sowing some newland and cereal crops for feed. There is a lot of interest in growing lupins in the eastern wheat belt.

No other reports this month.



Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
May 1981

Seasonal Conditions

Rainfall was well above average. The break in season occurred on May 22.

Pastoral Conditions

With the cold weather there has been a large number of reports of pregnancy toxemia and above-average lamb deaths.

Winter Cereals or Crops

About 25 percent of the intended crop area has been sown by the end of May. A reasonable portion of this was direct drilled in new land and second-crop areas. Isolated flooding occurred in Koorda and Bencubbin Shires in late May. Much of the heavy soils area is too wet to cultivate or plant.

No other reports this month.

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
June 1981

Seasonal Conditions

Below average rainfall was received but with an effective distribution pattern. Some water-logging occurred on heavy land in early- to mid-June. Water erosion is evident. The month was cold with temperatures below 0°C. Four or five heavy frosts occurred.

Pastoral Conditions

Pastoral growth has been very slow. There was good medic germination on heavy soils. Medic is causing problems as a crop weed in some areas. Regeneration was very poor in subclover pastures. Large stock losses due to the cold weather and lack of feed were encountered, also large lamb losses. Farmers are handfeeding. Most dams and tanks are full.

Winter Cereals or Crops

Ninety percent of the crop was sown by mid-June, almost all by the end of June. There has been a 5 percent increase over 1980, with 30 percent of the crop this year sown by one-pass direct drilling. Emergence and growth have been slow due to cold weather, delayed by a week or longer. Herbicide spraying has begun.

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
July 1981

Seasonal Conditions

Below average rain was received but with a good distribution pattern. Strong winds mid-month caused crop damage. One farmer at Muntadgin reported 2000 ha windblasted, but in most cases the area affected in each crop was small. The crops most affected were sown in late June or had been worked to fine tilth for control of ryegrass by pre-emergent ryegrass chemicals. All affected areas showed some recovery by the end of the month.

Pastoral Conditions

There are many good medic stands on medium to heavy soil areas. There was a number of inquiries on how to control weeds in legume pastures. Stock were hand-fed most of the month, but this was reduced as pasture improved at the end of the month.

Crop Conditions

Most crops were at the tillering stage at the end of July. Herbicide spraying was the dominant activity. Some damage from hoegrass mixtures on young (3-leaf) crops occurred. There were emergence problems on heavy clay soils due to surface sealing. Some webworm damage was reported. Lupins look encouraging.

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
August 1981

Seasonal Conditions

Above average rainfall was received for the month. Strong winds caused areas to be blown out in mid-July; about 1400 hectares were affected.

Pastoral Conditions

There was good growth for pastures. The experimental areas of Serena Medic look very encouraging.

Crop Conditions

Yellowing due to several conditions: the cold, waterlogging, lack of nitrogen, or disease. Warmer conditions at the end of the month improved the crops. There was widespread Septoria and leaf spot infection. Small areas of rhizoctonia root rot were found in wheat. Lupins are doing well overall, with some brown leaf spot and some rhizoctonia crown rot. Two lupin stands were affected by 2,4-D spray drift.

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
September 1981

Seasonal Conditions

Rainfall was well below average. An average of 10mm for the district fell on the 1st and 2nd of October. Strong winds have continued to cause problems on areas blown out in mid-July.

Pastoral Conditions

Seed setting is underway. There were some good Nungarin subclover burr settings. Large amounts of barley grass and brome grass compared to other years are setting seed. This could create problems next year for indirect drilled crops. Blue green aphids in large numbers are on medics.

Crop Conditions

Dry conditions have shattered hopes of above average yields. There is "tipping" and burnt flag leaves in the crops on heavy soils. Crops on light soils did reasonably well. Yield prospects now look to be average to slightly above average on light soils and average to below average on heavy soils. Lupins have podded well; yield could be 0.8 to 1.0 tonne/ha. There were some bushworm grub problems, also some damage by spray drift of 2,4-D; most not severe.

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
October 1981

Seasonal Conditions

Below average rainfall of 6.8mm to 13.2mm was received over the district on the 1st and 2nd of October. Strong winds occurred during the month.

Pastoral Conditions

Potential seed set for subclovers was reduced by the below average rain for October. Blue green aphids are a problem on medic and subclovers.

Crop Conditions

The worst crops in the area are, on heavy soils at Southern Cross (expected yield 0.4 tonne/ha.) The coarse grain harvest has started. Lupin crops were sprayed for budworm grubs at mid month. Yield prospects for lupins are 0.8 tonne/ha.

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
November 1981

Seasonal Conditions

Thunderstorms occurred, with above average rainfall. Hail damage occurred to crops in two areas. Most severely affected was a strip 3km to 10km wide by 60km long, from south of Merredin (Ulva Valley) to south of Doodlakine. Up to 135mm of rain fell in this area; hail flattened crops and washed out pasture fields; stock was lost; and damage to buildings occurred. Ten farmers lost all or most of their total crop. Another area from Koorda to north of Kununoppin to Wilgoyne had hail damage to crops. There, five farmers lost significant areas of their crop to hail damage.

Pastoral Conditions

Feed quality rain was affected.

Crop Conditions

The rain caused gully soil erosion and interrupted the harvest. The area has average to above average yields. The early-planted direct-drilled crops yielded well. The Southern Cross heavy soil areas are the worst in yields, with 0.4 tonne/hectare. Lupin crops were yielding 0.8 to 1.0 tonne/hectare. Most crops have 100 to 250 kg/ha of seed on the ground after harvest. The medium to heavy soil areas have been fallowed.

Summarization of the  
Western Australia Department of Agriculture  
Monthly Seasonal Report  
Merredin District Office  
December 1981

Seasonal Conditions

General rain (10-30mm) received at the end of the first week in December interrupted harvest and germinated summer weeds. Mild temperatures prevailed in the 30°C range. Waterlogging in northwest portion of the district is evident.

Pastoral Conditions

After a slow start, pasture advanced in September, keeping ahead of stock. There was adequate stock feed in most areas. South of Merredin, the farms that were hail damaged have no feed in the pasture paddocks.

Crop Conditions

Yields were satisfactory, approaching average for the district. The Yilgarn and Southern Cross heavy soil areas have been severely drought-affected (yields 300 kg/ha).

Cold and waterlogging in June and July affected some early sown crops. There are flag smut problems in the north and at Bencubbin. Rhizoctonia bare patch is a problem in areas from Wialki to Bruce Rock.

5000 ha of lupins were grown this year with promising yields. Yields ranged from 0.4-1.2 tonnes/hectare. They appeared more drought and acid soil tolerant than wheat. Lupin acreage could increase five times for the 1982-83 season. Budworm was a problem on pastures and lupin crops.



Summarization of the  
Western Australia Department of Agriculture  
Quarterly Activities Report  
Moora District Office  
April - June 1981

Seasonal Conditions

It was dry up to May 20 when the break of season occurred; persistent rains occurred through June. The seasonal rainfall by the end of June was as high as 350mm at Gingin to 125mm at Dallwallinu, moving towards the outer wheat belt area.

Pastoral Conditions

Pastures were slow to develop. Inadequate feed reserves existed for many farmers for who need it May and June lambing ewes; then colder conditions (after the break in season) resulted in heavy deaths. There were heavy lucerne flea infestations.

Crop Conditions

Except for low areas around Moora and parts of the difficult western country, seeding progressed well. Lupins were not expected to do well due to the cold and late break of season. Sand plain stands were poor.

Summarization of the  
Western Australia Department of Agriculture  
Quarterly Activities Report  
Moora District Office  
July - September 1981

Seasonal Conditions

Average precipitation occurred.. Eastern area crops are doing well, but crops in the higher rainfall districts on sandy soils have poor growth due to leaching in June.

Pastoral Conditions

Poor growth occurred due to cold weather conditions. Some cases of heavy stock losses came about from the cold wet conditions.

Crop Conditions

Sandy soil, high rainfall areas have poor growth. Eastern areas are doing well. Five percent less of the crop has Rhizoctonia disease.

Summarization of the  
Western Australia Department of Agriculture  
Quarterly Activities Report  
Moora District Office  
October - December 1981

Seasonal Conditions

Average precipitation occurred in October; hail, rain, and wind damage occurred in November and December. Some severe crop losses.

Pastoral Conditions

Below average pasture production. Feed (for sheep) is low in higher rainfall areas.

Crop Conditions

Harvest has been extended into early January due to stormy weather. Eastern parts of the district had good yields, but were disappointing in the higher rainfall areas. The same is the case for lupins. At Cadoux and East Wubin, lupins yields were 1.0 to 1.2 tonnes/hectare. Milling variety wheat was reported to have abnormally high head loss due to wind.

Summarization of the  
Western Australia Department of Agriculture  
1981 Growing Season Report for the  
West Coorow Area  
Three Springs District Office

Seasonal Conditions

Total annual rainfall was 526mm for West Coorow. Only the May to October rainfall was considered effective.

May	140mm
June	112mm
July	105mm
August	65mm
Sept.	20mm
Oct.	15mm
Nov.	34mm
Dec.	6mm
Subtotal	497mm

For R. Raffan's property  
located within the AgRISTARS  
segment 4425 area.

The beginning to the "growing season" was delayed because of no rain for March or April; the growing season was delayed by several weeks. The break of season occurred May 22, when 12mm to 20mm of rain were received, and additional rain came later. The growing season was then severely restricted from mid-August to the end of the winter cereals season due to the sharp decrease in the amount of rain received. Virtually no finishing rains came. Deep sandy soils and other low-moisture-carrying capacity soils dried out very quickly.

Pastoral Conditions

Temperatures were lower than average from the break in season onwards; as a result, feed growth was slow. Pastoral growth was highly dependent on soil type. Pastures, in clover on the poorer soils, wilted in September and did not recover when it rained on October 2.

Crop Conditions

Crop yields were soil type dependent. Yields for wheat ranged from 2.5 tonnes/hectare on clay loams to 0.4 tonne/hectare on deep sands.

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